

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

GIFT
OCT 17 1913



Gleanings *in* Bee Culture



VOL. XLI. OCT. 1, 1913, NO. 19.

EARLY-ORDER CASH DISCOUNTS

**Apply Here just as they
do at the Factory**

As Southwestern distributors of **ROOT'S BEEKEEPERS' SUPPLIES**, we are very glad to make this first announcement of a special discount for early orders, accompanied by cash, to our beekeeping friends throughout this territory.

We give exactly the same discount that is granted by the manufacturers of these famous goods, and the prices in our special catalog are the same as their own. There is an extra saving for you in ordering from us—**FREIGHT**. Better give this your special attention before ordering from elsewhere.

THE CASH DISCOUNT ON EARLY ORDERS PLACED IN OCTOBER IS 6 PER CENT.

This applies to every thing in the way of beekeepers' supplies except a few special articles. On large general orders we will allow the discount on some of the excepted articles, not exceeding ten to twenty per cent of the entire order.

REMEMBER WE MANUFACTURE THE FAMOUS WEED PROCESS COMB FOUNDATION.

We have a large demand for this product, and are turning out comb foundation of the finest quality. Include what you will need for the opening of next season in your early order. Shipment may be held subject to your convenience if desired; but get your order in now and save 6 per cent.

**Toepperwein & Mayfield Co.
San Antonio, Texas**

Gleanings in Bee Culture

Published by the A. I. Root Co., Medina, Ohio.

A. I. ROOT, Editor Home Department.

J. T. CALVERT, Business Manager.

Entered at the Postoffice, Medina, O., as Second-class matter.

VOL. XVI.

OCTOBER 1, 1913.

NO. 19.

Editorial

"CASH FOR YOUR HONEY AT YOUR DOOR."

DO NOT fail to take advantage of the special offer by N. E. France, as announced in his advertisement on page 20 of this issue.

MR. C. E. PALMER, of Ransomville, Niagara Co., N. Y., wrote us on June 13, "Bees have been killed by the peck in this locality by spraying with arsenate of lead; and it looks now as if little or no comb honey will be secured this season."

EMBARGO ON THE SHIPMENT OF BEES IN IMPERIAL COUNTY, CALIFORNIA.

THE following telegram came too late for insertion in our issue for Sept. 15, and hence we are inserting it here at this time.

On account of prevalence of European foul brood, the bee inspector of Imperial County has quarantined against shipping of bees from any of the counties in the southern half of California into this county. This is an absolute quarantine. Any one contemplating shipping here had better get full information and save expense.

Imperial, Calif., Sept. 11.

J. W. GEORGE.

THE TEXAS FOUL-BROOD LAW INOPERATIVE FOR THE WANT OF FUNDS.

WE are advised by Mr. Wilmon Newell, State Entomologist for Texas, that the last legislature which was in special session in July and August did not make any appropriation for the continuation of foul-brood or educational work. The beekeepers of the Lone Star State are, therefore, without funds for keeping up their fight against bee diseases during the next two years. This is too bad.

CARELESSNESS IN STRAINING HONEY.

THE following statement in a letter to a honey merchant in New York State is right to the point. "I have bought honey this year that averaged about one cupful of dead bees to every sixty-pound can, and there was more or less other foreign matter besides."

A few cans of honey put on the market in such condition will do more to lower the price of honey generally, and to cause suspicion regarding it, than can be offset by all the advertising and painstaking efforts of careful producers combined. Every pound of inferior honey sold hurts the honey business in general, and the careless producer in particular.

OUR COVER PICTURE.

THE view on the cover for this issue shows a part of the apiary of George Zautner, located in the city of Albany, N. Y. Mr. Zautner writes that the honey crop, while it is quite light this season, was very good last year. In 1912 his 72 colonies, spring count, produced three tons of honey.

We are glad to present on page 679 another view of the apiary showing also Mr. Zautner and his family. So far as we can recall, this is the largest crop of honey ever produced right in a city. Are there other city beekeepers who can beat it?

A CORRECTION.

IN giving credit to Professor Baldwin, who assisted us in the preparation of matter relating to honey-plants, in the preface to our A B C and X Y Z of Bee Culture, we gave his name as Eugene G. Baldwin when it should have been *Edwin G. Baldwin*, of Deland University, Deland, Fla. Both Mr. Lovell and Mr. Baldwin did excellent work in bee botany for the A B C, and we have expressed our acknowledgment to both the gentlemen; but, unfortunately, we have obscured Professor Baldwin's name just enough so his friends do not recognize him as one of the editors in the new work.

INSURING BEES AGAINST FOUL BROOD IN SWITZERLAND.

FROM the *Scientific American* for March 15 we learn that a form of insurance has been in existence for several years against disease (not against winter loss or any other contingency). A few years ago the Swiss Beekeepers' Association decided to establish a system of insurance, to be compulsory upon all the members, of whom there are about 7000, each paying a premium of about one cent a hive. In return for this they are guaranteed free treatment of suspected colonies, with instruction and assistance, and also with compensation to the extent of 75 per cent of the value of hives and combs destroyed by inspectors.

In December, 1909, the Swiss government decided to take over the inspection and treating of diseased colonies, and the Association was thus relieved of the expense.

In 1911 the number of colonies insured was 105,179; cases of foul brood, 114; the expenses, including claims paid, exceeded the premiums paid by 342 francs, or in our money a little over \$17.00—very small loss, surely.

In this country, owing to the fact that disease is more prevalent in some localities, at least, the premium would doubtless have to be much higher than one cent a colony.

FREE BOOKLETS ON THE USE OF HONEY.

THE National Honey-producers' League is preparing to send out to honey-producers free literature in the form of booklets designed to stimulate a demand for honey. The only condition required is that applicants pay their own postage. (See how they may be obtained in the advertising section of this issue, page 20.)

The Honey-producers' League was organized for the purpose of advertising and creating a demand for honey. The way seems to be open by which funds which it has held can now be distributed for the benefit of beekeepers at large in this country. All honey-producers, especially those who sell in a retail way, should avail themselves of this excellent opportunity before the supply of booklets on the uses of honey has been exhausted.

We understand that Mr. France proposes to use the balance on his hands (some \$600) for purchasing and distributing this literature. There will doubtless be a very heavy demand for the booklets, and those who desire to secure them will do well to get in touch with Mr. France at once, before the supply is exhausted and the money is gone. The issuance of these booklets just after the present fine crop of honey has been secured is particularly opportune.

NEW SUPERINTENDENT OF APIARY AT THE MASSACHUSETTS AGRICULTURAL COL- LEGE; JOHN L. BYARD APPOINTED.

THE apicultural work at the College is growing so rapidly, and the demands of the beekeepers are becoming so insistent and general, that it has been found necessary to maintain a larger number of colonies of bees in order to accomplish results. This healthy growth is an index to the interest in apicultural advancement.

To enable the proper upkeep of the stock, Mr. John L. Byard has been appointed Superintendent of the Apiary, beginning September 1. Mr. Byard, besides attending to the bees, will also assist with classes, maintain the apiary building, exhibits, and collections, and prove new methods and implements. The addition of Mr. Byard to

the corps in Massachusetts interested in the promotion of beekeeping should afford further service to eastern beekeepers, heretofore impossible to render.

Mr. Byard is known to the majority of Massachusetts beekeepers through his extensive service as Deputy Apiary Inspector since 1911; as President for three years of the Worcester County Beekeepers' Association, and through numerous demonstrations at conventions and institutes. He is now president of the State Beekeepers' Association of Massachusetts, a delegate body representing the local organizations of the State. His life-long experience with bees began in Vermont with his father, a bee-keeper and bee-hunter, since which time he has been in the front rank of practical beekeepers.

Since 1888 he has been recognized as an experienced and successful apiarist in Southboro, Mass. Many a beekeeper in New England will acknowledge indebtedness to Mr. Byard for enthusiasm, encouragement, and assistance rendered them, either as a beginning beekeeper or one confronted with perplexing problems.

DROUGHT BROKEN; SHIPPING COMB HONEY; THE IMPORTANCE OF MOVING IT EARLY.

THE drouth that prevailed in many sections of the country has been broken by copious and refreshing rains. Where clover was only partially killed out, the plant will take a new lease of life, for it has wonderfully recuperative power. If conditions from now on are favorable, followed by plenty of snow, there is no reason why clover should not do as well next year as this.

Our Honey Column will give the trend of prices; and it should be borne in mind that now is the time to sell honey, especially that in the comb. If comb honey is not moved by ear before freezing weather, it is pretty sure to be broken in transit, and, worst of all, it will begin to granulate. When granulation once sets in, the process is rapid; and of all things, granulated comb honey is difficult to sell.

Comb honey, especially alfalfa, from now on should be kept in a warm room or building. It is very, very important that there be no rapid variation from high to low temperature. Comb honey stored in a room without artificial heat, in the Northern States, may be warmed up by sunshine, and at night the temperature may go down to 60, 50, or even 40 degrees. If the room is, we will say, 75 during the middle hours of the day, and goes down to 50 at night, and if that variation continues for a couple of weeks, granulation is almost sure to set in.

We can not emphasize too strongly the importance of moving comb honey in car lots before freezing weather sets in. There have been more jangles and more trouble over late shipments of comb honey than over almost any other proposition connected with the honey business. Comb honey, when near or below freezing-point, breaks very easily, and a car of it at such times is quite sure to arrive in poor condition.

BRIEF NOTES ON MODERN RATIONAL BEE CULTURE; DEVELOPING AND IMPROVING ITALIANS IN THEIR NATIVE COUNTRY.

THE above is the title of a new bee-book in Italian, by Gino Travaini, a teacher in the Provincial Agricultural School of Goritz, Austria. Mr. Travaini has put out a charming and interesting book. But the feature that makes it most interesting to us in this country is the fact that it has so much to do with American hives and methods. While the illustrations and descriptions of European hives and equipments are given due prominence, it is evident that the author has become permeated with the American way of doing things.

We believe it is the general consensus of most beekeepers of the world that the Italian is the best all-around strain of bees. Some of the old original imported Italian queens of some twenty years ago were some of the finest that we have ever seen—not in point of markings and bright golden bands, but in honey-gathering qualities, longevity, and gentleness. If this book shall result in the development of this strain of bees right in its own native clime, it will have well served its purpose in Italy and the outside world at large. At the present time we are unable to secure as fine a strain of imported Italians as we did some years ago. Why this is so, we do not know. If it is because beekeeping has retrograded in Italy, this work will serve to stir up a new interest. It will also mean the development of that strain of bees that has become famous the world over. Speed the day.

MORE ABOUT THE SMOKE METHOD OF INTRODUCING.

FOR a couple of issues back we have mentioned the success we have had in introducing virgin and laying queens, some of the latter too old to be introduced by any method except the use of smoke. We have been watching Mr. Marchant introducing by this method; and when we asked him if there was not danger of introducing queens by that method he replied, "Not as I do it." His plan is this:

He approaches a hive with a virgin or

laying queen. He then starts the smoker going, giving a dozen or two strong puffs out in the air. When the smoke rolls out of the smoker into the air dense and heavy he blows three strong puffs in at the entrance and then closes the hive. After an interval of perhaps ten or fifteen seconds he picks up his virgin and pushes her in at the entrance. He then follows her up with one more strong puff of smoke, and closes the entrance. In all he gives only four puffs—all that a large smoker will give when the bellows is closed clear down at each puff. Certainly this amount of smoke would do no harm to either bees or queen.

Up to this point Mr. Marchant follows the plan as laid down by Mr. Arthur C. Miller, p. 370, *GLEANINGS*; but instead of waiting 12 hours or over night, he removes the plug over the entrance in some five or six minutes, as he finds it not necessary to keep the hive shut up any longer.

Another thing he discovers is that this way of introducing can not be employed successfully in a small nucleus in full-sized hives, even if the rest of the space be filled up with empty combs. An ordinary division-board placed next to two or three frames is not sufficient to confine the smoke or the queen when she is allowed to run in. There must be a tight-fitting division-board or the queen will run wild into the vacant space; and when she does get back where the bees are, there is "trouble."

In one place where we watched Mr. Marchant he smoked in 23 virgin queens in as many different hives. Of these, 22 were found accepted and laying a few days afterward.

Mr. Miller's improvement over the old Alley plan of using tobacco smoke for introducing is in showing that tobacco is not necessary, and that an excessive amount of any smoke is not only not needed but cruel.

LAYING WORKERS AND A LAYING QUEEN IN THE HIVE AT THE SAME TIME.

FOR over ten days we have had laying workers and a laying queen in the same colony at the same time, the laying workers pursuing their careless go-as-you-please way, and the queen her careful methodical way. While this has been reported before, the facts in this case may be interesting.

By an oversight a queen that had been introduced to a colony without young brood, some time in June, was not checked up later on, as is our usual custom, and it so happened that the queen was not accepted. At any rate, the colony was left hopelessly queenless for some weeks, and laying workers developed. The true state of affairs

was discovered about the 15th of August. On the 21st, as an experiment, a laying queen was run into the entrance of this colony by the "smoke" method, and, contrary to what might be expected, was accepted and at once began laying. We have known of other instances like this, so that, up to this time, our story reveals nothing out of the ordinary. However, contrary to the usual rule, the laying workers did *not* disappear. Their haphazard work, consisting of several eggs in one cell, eggs attached to the sides of the cells, and eggs everywhere, in fact, continued right along, and yet in the midst of it all could be seen the work of the laying queen. She proved to be a good layer, as her work could be distinguished by the regularity and uniformity—that is, the eggs were in regular order, and always placed in the same way in the bottom of the cells. All about could be seen the work of the laying workers, the appearances going to show that they apparently entered into competition with the queen. It is not often that one can witness in a single comb such a curious combination of the regular and irregular placing of eggs, bordering upon (shall we say?) a mixture of the sublime and the ridiculous. Patches of perfect worker brood could be seen surrounded by scattered drone brood, cells containing larvæ and eggs both, others with five or six eggs, etc. How long this struggle between the normal and the abnormal would have kept up we do not know; for on September 1, fearing that the abnormal might prove the stronger we called off the game, removing the laying queen, and placed her in a hive where she would have full sway.

Was this queen an unusually courageous one, or one who disliked to show her authority? The colony being so long without a good laying queen was made up of old bees, most of which were black and shiny. Had conditions gotten so bad that they had given up all hope? or had the laying workers become so numerous that there had not yet been time in the ten days that had elapsed since the queen had been introduced for their work to come to a stop?

AN AMERICAN BEEKEEPER IN NORWAY.

WE were recently favored by a visit from a native of Norway, Mr. Ewald Omdahl, Drammen, Norway, who is nevertheless an American beekeeper in every sense of the word, for he uses American hives and fixtures, and he is a close student of American methods. Among writers in this country he is a great admirer of Dr. C. C. Miller and the late E. W. Alexander.

Mr. Omdahl's chief business is the manufacture of leather; but he has a beautifully

kept apiary, managed according to the very latest and best accepted practices of America, right in the heart of a city of 30,000 inhabitants. The bees are obliged to fly a considerable distance. During his three trips to this country he has made a special study of American methods, and has visited various noted beekeepers. His apiary is made up of Carniolans and Italians, not crossed, but in their purity. He prefers the Carniolans, because they work better in all kinds of weather, and are easier to handle.

We doubt whether there is a bee-cellars in the United States with such elaborate means for controlling the ventilation and temperature as this one of Mr. Omdahl's. It is built especially for wintering bees, of concrete, and the temperature is accurately maintained throughout all variations of all outside temperature by means of electric heaters, which can be turned on or off at will. These heaters do not exhaust the air, nor do they give off any bad odor.

This cellar has been used three years without any loss of colonies. Drammen is located on the sea coast, hence is not subject to any violent changes of weather. In many ways the climate is like that of Northern Ohio, as bees are generally removed from the cellar the latter part of March to get the early pollen which comes in the fore part of April.

Among the sources of honey may be mentioned the dandelion, willow, maple, fruit-blossoms, alsike clover (two crops), raspberry, some white clover and basswood, much heather in some localities, sunflowers, blueberry, etc. Two honey-flows are secured from the alsike—one beginning about June 20, and the other in August, but this latter crop is not so sure. The wild raspberry blossoms more or less all summer long. The principal sources of surplus honey are the alsike clover, the raspberry, and the heather. A peculiarity of the heather honey, as is well known, is that it is so thick that it must be extracted before it is sealed over, else it can not be taken from the combs at all in the ordinary centrifugal honey-extractor. From one five-story colony of pure Carniolans, whose queen was imported from Carniola (Austria) the year before, he took \$32.00 worth of comb and extracted honey.

Mr. Omdahl feeds 25 lbs. of sugar syrup, made of two parts of granulated sugar and one of water, to every colony in the fall—generally the first week in September. This amount is fed rapidly and at one time. The sugar is the unbleached yellow granulated sugar, 98 per cent pure, which is obtained from the condensed-milk factories. It is probably imported from the West Indies.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

FOR the second time in my life I have seen a queen sting a worker to death. Aug. 15 I put a virgin not a day old on a comb of a nucleus. The first thing it did was to clinch a worker, which showed it had been stung when it was released, but it did not die till some minutes later. Why did the queen sting that worker? A general spirit of destructiveness is shown another way in a young virgin. After she emerges from her cell in a nursery it is a frequent thing to find she has dug a hole in the side of the cell, as if she would kill the inmate.

THERE you go again, Mr. Editor, p. 561, telling us the average Ontario crop is 63 lbs. per colony, without saying whether comb or extracted. You may know what kind, but not every one else does. [There are times when we can not be specific in regard to comb and extracted honey. The reports sent out by the Ontario Beekeepers' Association did not say whether the 63 lbs. average was comb or extracted. The beekeepers of the country very seldom specify the number of pounds of comb or extracted honey. We should judge that most of the honey produced in Canada is extracted—possibly three-fourths of it.—ED.]

P. C. CHADWICK, you're wise to return to the book-record system, p. 600. You can lie on a lounge at home with your book, and lay out a program for the day's work in an out-apriary, saving time and avoiding blunders. Or, if you're too busy for that, you can do your planning on the way out. Then, too, it often happens that one wants to know exactly how something was 5, 10, or 20 years ago, when memory would be hazy about it. I believe the time is coming when every forward-looking beekeeper will count the improvement of his stock a point of the highest importance; and I don't quite see how much can be done in that line without an exact record.

J. E. CRANE, why didn't you ask that question before about having trouble with young queens hatching if a colony was left ten days, p. 564? I had the answer all ready a year ago, and it was this: "For at least 40 years I've followed the rule that a queen-cell could not be started and a queen hatched from it inside of ten days, and I never knew it to fail. I've tried it hundreds—yes, thousands—of times, with never an exception. When I give a comb of eggs and young larvæ to a queenless colony to have cells started, I know I'm safe if I cut the cells in ten days. No, friend Crane, that's one of the things I know, and know

for certain, that with me there is no exception to that rule." But I can't use that answer now. This summer I went to cut a batch of cells ten days after giving the comb, and found the oldest virgin already out and beginning the slaughter of her baby sisters in their cradles. So my answer now must be, "Never? well, hardly ever."

"It is probable that there is no great amount of nectar at any one time in the sweet-clover blossoms," p. 557. Is that the testimony of those who have sweet clover in large quantity? I had always supposed it an abundant yielder, from the fact that the bees are found in such numbers upon it.

P. S.—Just been out watching bees on sweet clover. Besides being thick on it, they seemed to spend at least as much time on each blossom as they do on white clover. [Perhaps the statement in question was a little too strong. There are times and places when sweet clover does yield considerable nectar; but in most localities in the East it does not yield a large amount of surplus, for the simple reason that the plants are scattered in long rows along railways and common roads. It is seldom found in solid compact masses or areas. As the agricultural press is now beginning to wake up to the value of this plant the probabilities are that sweet clover will be very much more in evidence in the future than it has been in the past.—ED.]

A. I. Root, old friend, aren't you a wee bit off in thinking that just because that beautiful first Psalm is so brightly hopeful it must have been written when David was comparatively young, p. 585? When he was old, and yet had never seen the righteous forsaken, hadn't he a more substantial foundation on which to base his hopefulness? Besides, look at yourself. Are you any less hopeful as years increase? I'm sure it isn't so "in this locality." [Thank you, dear old friend, for your kindly suggestions. Yes, I do think that as we grow older we should grow more hopeful. The hope of a mature Christian, however, is a little different from that of boyhood; and I still think, but perhaps I can not explain why, David wrote that first Psalm when he was young—say before he got into Satan's toils and had deliberately broken two if not more of God's holy commands. I am glad to know, old friend, that your faith in God's promises grows stronger and stronger as the years pile up. May God grant that the same may be true with each and all of the old "scarred veterans."—A. I. R.]

Notes from Canada

J. L. BYER, Mt. Joy, Ont.

A few days ago the Crop Committee of the Ontario Beekeepers' Association met in Ontario to consider the buckwheat-honey situation. Reports received indicated about the same yield as last year, which means a rather light crop, for last season was a long way below the average. In our locality the yield is much lighter than last year. Rain did not come in time to help the buckwheat; although we have had a light yield of this honey, for some reason the bees stored more honey in the brood-nest than usual, so of course we have the comfort of knowing that the feeding-bill will be lighter, even if the surplus is smaller than was anticipated earlier in the season. Any way, the crop from clover was good, so naturally we do not feel like grumbling at the situation.

* * *

Since writing my last notes for this department nearly all parts of Ontario have had copious rains, and the long drouth prevalent in many places has been broken. Rains came too late in many localities (our own section among them) to be of much help to the clover. As a result the prospect in these places is poor indeed for alsike next season. Beekeepers in Brant Co. report good catches of clover, and I understand that adjoining counties in that part of Ontario have been blessed with early rains too; so some parts of the Province will have a good chance of a crop next year any way. It is too early to make a forecast; and, after all, so much depends on weather conditions at the time of the honey season, no one ever knows what may happen, even if prospects are very poor. At the apiary 100 miles north, forest fires got uncomfortably near the bees; but rain came in time to prevent the fires spreading to the apiary. Nothing gives one a more uncomfortable feeling than to fear the results of a threatening fire; and I certainly heaved a sigh of relief when word came that rain had at last stopped the fires from spreading.

* * *

This spring a young man living near me sent to one of our well-known queen-breeders across the line for 25 one-pound packages of bees. The bees were sent just at the opening of the clover flow, and on coming to Toronto were stupidly held by the customs officials or express handlers (perhaps both were to blame) for 48 hours after their arrival in that city. Naturally the bees were in none too good shape when they arrived; but a strange feature of the case to me was that eight queens were dead in the

cage, although the majority of the bees were still alive but about starved out. My own experience has always been that the queen will be about the last one to die in case of starvation in hives or cages, and I could not understand the cause of so many queens being killed. My own conclusion at the time was that the queens had been killed when introduced to the bees in the cages; but I could hardly believe that such a thing would happen in case of queens mailed by an experienced queen-breeder. It is only fair to state that the queen-breeder in question acted very fairly and generously in the matter, and these criticisms are not made in a carping spirit. The breeder in question is and has always been noted for his desire to give the "square deal." Perhaps some others who may have had experience in shipping packages of bees may be able to explain why the fatalities among the queens were so high, and whether it is a common experience to find dead queens among the bees when they are shipped in this way.

* * *

NO OBJECTION TO HAVING COLONIES STRONG OUT OF SEASON.

G. M. Doolittle's reasoning on page 442, where he champions the plan of using dummies in the brood-nest for the purpose of forcing all white honey into sections is hardly clear to me. He says that in apiaries of blacks or hybrids the use of dummies will save from \$150 to \$200 in an apiary of 100 colonies; but with a good strain of Italians that will reduce brood-rearing as the flow increases, the use of these dummies for the purpose of repressing out-of-season productiveness is not so apparent. With a non-restricted brood-nest with such a strain as he describes what will happen in the honey season? It has been my experience that it invariably means that the colony will put a great lot of white honey in the brood-nest instead of in the sections; and for my part I should prefer to have the queen occupying the frames with brood instead of having the combs filled with honey. Where there is a buckwheat flow following the clover and basswood, I do not believe there is wisdom in trying to force a queen to occupy as few as five frames with brood, as in such locations there are no periods of from 35 to 50 days between flows as he specifies; but, on the contrary, when there is a basswood flow it makes us hustle to get it off before buckwheat comes on. For "our locality," "bees always strong" is the only safe rule if best results are to be obtained, and I never fret about bees being reared out of season.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

Editor Root, page 593, recommends the Burt system of preventing swarming, as illustrated on page 610. The Burt system may be all right at times; but with our cool nights in California it is a very difficult matter to preserve heat sufficient to get the outside rows of sections completed at best, and any additional air-admitting space should be avoided. This is only in keeping with what I have been preaching for a long time, that plenty of room will retard swarming by keeping the colony cool; and to my notion it is better than the Burt plan. By his plan the bees are simply forced to remain at home to help keep the brood warm by sheer force of numbers, while a hive might be manipulated in a manner that would permit many of the hive force to enter the field rather than to remain to hover brood. I am not sure but that it would be more profitable to allow swarms than to make a condition that will cause loafing inside of the hive to prevent swarming. The plan has been tried to some extent in this climate, and will reduce swarming as claimed; but in at least one instance I have known where a beekeeper used small rocks to prop up his hives for ventilating purposes when it would have been more appropriate to wrap them in blankets to preserve what heat they were able to make.

* * *

Early in the year I mentioned having questioned a number of members at the State convention concerning the color of alfalfa honey, and that many were of the opinion that the difference in color was due to darker grades becoming mixed with it, also stating that I was of the opinion that the pure alfalfa was white. In the April issue of the *Western Honey Bee*, Mr. Harry K. Hill took issue with me, stating that he gets at least three different shades during the season. In the May issue Mr. L. L. Andrews says of orange honey: "Some seasons it is much whiter than others, and at times much milder." In the June issue I cited the fact that every form of nature follows its law, each form on the line on which it was created, and that it could follow only the line given it, regardless of the opinion of man, and that a plant could not under the laws of nature produce more than one color of nectar. In the July issue Mr. Hill says that his observations were taken at a time and place that left no room for doubt on the matter, and intimated that climatic conditions might have something to do with the variation in color. In the same issue

Mr. Bixby says that he has been "wraslin'" with me for two years trying to convince me that the white-sage honey from the disintegrated granite of the foot-hills is much lighter in color than that from the dove lands. Why not alfalfa also? Then he adds, "These fixed laws of nature all have so many exceptions that they wiggle a little. Locality makes a lot of difference." He also says, "Nectar from cultivated buckwheat is often so light in color during the first few days of the flow as to be readily mistaken for clover honey, except for the rank odor." I presume Mr. Bixby does not take into consideration that the difference in soil has any effect on the color of white clover, as he makes no mention of the fact, and does not qualify his statement with a soil condition; and in this, at least, I believe he has weakened his own argument. In the September issue such able men as Mr. J. W. George claim that alfalfa is not white, while others claim that climatic conditions have an influence. Alfalfa honey may not be white—my strong contention has not been that it was, though I have not fully given up the idea yet—but my main contention is that, if it is not white, it must have a color peculiar to its nature, and that it does not change color with the wind nor the moon nor soil, nor does any other plant. If it does, then my twenty-five years of observation have been set at naught, for that would be entirely at variance with my observations. If there were no fixed color for the nectar of the various honey-plants, the mere name orange, alfalfa, white clover, basswood, etc., would mean nothing so far as color is concerned, as it might range anywhere from white to dark amber from the same source.

It will take a lot of evidence to prove to me that climatic conditions or soil have any influence on the color of nectar, any more than the atmosphere or the color of the food that I eat has any effect on the color of my blood; for, as I have said, it is not consistent with nature; besides, I am not willing to admit that I have no assurance of the color of honey I shall get from the orange alone or sage alone, though these trees and plants are growing on several kinds of soil within reach of my apiary, and there is always a variation in climatic conditions during the honey-flow.

This question is at least worth discussing; but I believe the majority of beekeepers will sustain me on my opinions of this matter.

Beekeeping Among the Rockies

WESLEY FOSTER, Boulder, Col.

BEES AND PARCEL POST.

I had two two-pound nuclei shipped April 15 from Texas. These bees were not shipped in the regular packages as shown in April 15th GLEANINGS, but were sent in the two-frame nuclei boxes with one frame and a bottle of water. The queens were caged. The sponges placed in the bottles came out during the trip, but the bees had not apparently suffered. One package weighed 9 lbs. and the other 7½. When started from Texas, three and a half days before, they weighed 18 lbs., according to the express billing.

The cost of shipping these two nuclei, weighing 18 lbs. combined, was \$2.63, or at the rate of 15 cts. a pound. By mail it would not have amounted to more than about five or six cents a pound. And, bee-men, there is no reason why we can not take this matter up with the Postmaster General and get bees sent in pound, two-pound, and five-pound packages by parcel post. The Postoffice Department does not put all mail into sacks. The postmaster at Boulder told me that all fragile goods are handled outside of mailsacks just as carefully as is done by the express companies. Eggs are being sent all over the country for setting, and baby chicks are being sent the same way: and I should like to have some one tell me why it would hurt a postal clerk to get stung any more than an express agent. Why can not the Postoffice Department handle this business as well as the express companies? We will see that they can very soon, for we can not have discrimination.

* * *

THE PSYCHOLOGY OF INCREASE.

We have the psychology of business, the psychology of success, the psychology of the mob—nearly every thing is psychological these days, so why not put bees in the psychological category? There is about as much psychology in a hive as in any thing I know of, and Mr. Maeterlinck would probably say there is a great deal more. All of which, by the way, is introductory to what I want to say regarding making increase without lessening the honey crop. Coming back to psychology again, it should be remarked that the Alexander plan of making increase is taking advantage of colony conditions at the psychological moment.

Bees built up with gratifying rapidity last spring. In an apiary of 100 colonies, one-fourth of them had brood in all their ten frames by April 30. Combs of sealed

brood and hatching bees were given to all weak colonies, and many hives with more honey than needed were relieved of some, and empty drawn combs were put in their places. Forty combs of honey were taken out in this way to give room for breeding. This honey went back to the bees again a little later to feed the brood and young bees coming on.

Our main honey-flow does not begin until early June, so that, in order to keep our bees on the up grade, we use the Alexander plan of increase on all we can. The queens must be kept busy laying until June. If we can keep them laying, there will be less swarming, and we will have twice as many workers for the alfalfa harvest in June, July, and August. When we take eight or nine frames of hatching brood and place them over an excluder with the queen below, and an abundance of combs all clean and ready for the laying of eggs, that queen just gets busy, and it keeps her busy for some little time too. In ten days the upper hive with queen-cells, perhaps, may be set aside, the cells cut out, and a young queen given. Feeding may be necessary, but it will pay well to feed both lots of honey if necessary to keep up brood-rearing. A hive jammed full of brood June 1 to 10 is going to begin super work much sooner than one that is half full of brood. The first forty pounds of honey will go below if there is room for it.

The defects in the queens will show up right along when conditions are such that the queens are unhampered for egg-laying room. You will soon realize the need of extra queens. One, two, or three dozen on hand all the time these days will be an advantage.

Educational Apiary in London

In the 1912 Reports of the Zoological Society of London which I have just received I find the following on pages 8 and 9:

BEEKEEPING.

The Council arranged with the British Beekeepers' Association, which had received a grant from the Development Commissioners for the establishment of an experimental and educational apiary in London, to provide accommodation at the Gardens. A site on the north bank of the canal was selected for the apiary, made suitable for hives and for demonstrations, and the use of the lecture-room for lectures was given. The association paid the society a small rental to cover expenses, and agreed to remove the bees if their presence proved injurious to visitors or to the animals. So far as the society is concerned, the arrangement worked satisfactorily in 1912.

Valparaiso, Chile, June 10. J. A. WOLFSOHN.

Conversations with Doolittle

At Borodino, New York.

GRADING AND CRATING COMB HONEY.

"How shall I crate my comb honey? This is my first experience in sending honey to a distant city."

"I would advise you to put not over twenty sections in a case, and then to put nine of these cases in a crate made with two handles on each side so that two men can handle it. This large crate will weigh about 200 lbs. In this way there is not the liability of breakage that there is where each of the nine cases of twenty sections each is shipped separately. This is on the supposition that you will ship your honey as freight. Comb honey by freight is much less liable to breakage than when sent by express, for all express matter is handled very rapidly on account of the short stops of such trains."

"But my honey is of different shades of colors, some being made from clover and basswood, some from buckwheat, and some from goldenrod and fall flowers."

"These different kinds should all be kept by themselves, and not mixed. You would hardly expect that a man having apples of different kinds to sell would mix greenings, Baldwins, and Spies together, would you?"

"No. But suppose he has those greenings, Baldwins, and Spies, each in different piles, and all of them are nice smooth apples. And we will assume that, as to size, they run from 1½ to 3 inches in diameter, and that some of them grew on the sunny side of the tree, so that they are nicely colored, and some in the shade, with little color on them. Will he pick them up promiscuously and put them in the barrels thus? or will he put the largest and nicest-colored in the bottom and top of the barrel, filling in the center with the remainder?"

"We are now getting at some of the old difficulties of the past. Possibly I can answer better by telling you of the instructions I received from a man to whom I sold apples a few years ago. He bought thousands of barrels of apples, and shipped them to large cities. In the first place, no apple was to go in that would go through a hole bored with a two-inch auger, no matter how smooth, perfect, or highly colored. All these were to go in as seconds. Then from the firsts and seconds the largest and best-colored half bushel was to be selected to go into the bottom of each barrel marked firsts and seconds. These selected apples were to be placed stem down on the bottom of the barrel till that was covered, when the rest of the half-bushel was carefully poured on them. Two bushels were now picked up

promiscuously and put in the barrel. A second half-bushel of apples was selected as was the first, and poured on top. The barrels were now headed up, turned over, and marked firsts and seconds, with the kind; and when shipped the shipping directions were put on this end, so that, when opened at their destination, the row of choicest fruit would stand out prominently, stem end up, which gave a very inviting and tempting appearance."

"But was not such a course a sort of fraud?"

"That was the question I asked, but was told that the market demanded this way of putting up apples; and unless I put them up according to instructions the apples would not be accepted, as the buyer could not get market prices in any of the different cities he shipped to unless they were so put up. I protested a little to draw him out, and was met with 'How can it be considered a fraud to put up apples thus? All apples that will not go through a two-inch hole are called in market firsts or gilt-edged. I do not retail these apples, but sell from one to forty or more barrels to grocers and jobbers, and these men specify how I must put them up.' Now, while this does not fully apply to honey in sections, yet it has a bearing in the matter. First, the different kinds of honey should be kept separate, and such sections as have mixed honey in them should also be kept separate.

"Second, while no two-inch hole can be used for grading honey, yet each kind should be sorted as regards travel-stain, evenness of comb, unsealed cells, etc., generally making three grades, as fancy, firsts, and seconds, doing this grading carefully and honestly. Now, as with the apples, let us suppose the honey is graded, and we are easing fancy. We take out enough sections to fill a case. How are these sections to be put in that case? Haphazard? Not one buyer or commission man has so instructed during my forty odd years of beekeeping. All have believed that it was perfectly right to select from *that case a number of sections* those that are the best, and put them next to the glass. Yea, more. I have always been instructed to turn the best or face side out at that. But you will note that this dishonest facing matter hinges on the sorting or grading rather than on any thing else. For a man to go through his crop of honey and sort out the very best sections, and use these for 'facing' his cases of culs would not only be dishonest, but also very foolish, even from a business standpoint."

General Correspondence

A NEW PLAN FOR THE PRODUCTION OF COMB HONEY AND FOR THE ELIMINATION OF SWARMING

Cutting Extracting-combs in Pieces and Fitting them into Sections for the Bees to Fasten

BY DR. G. A. HUMPERT

Some weeks ago we received a letter from Dr. Geo. A. Humpert, a specialist, of St. Louis, Mo., who had evidently taken up beekeeping for pleasure and profit in his back yard. He said he had developed a new system for the production of comb honey that would make it possible to secure perfect sections of honey, all fancy and No. 1, with no seconds; and, more remarkable still, he would be able to eliminate the nuisance of swarming. He desired to know what we would pay for such an article, saying he thought it ought to be worth a considerable sum; for if one could produce all fancy and No. 1 comb honey and eliminate swarming, it would mean a good deal to the fraternity. We were not willing to pay any definite figure until we could have some knowledge of its feasibility from some disinterested party like Dr. C. C. Miller, of Marengo, Ill. The result of our negotiation was that the plan was to be submitted to Dr. Miller in all its details, and that Dr. Miller, after examining the same, should give us his unbiased opinion of its feasibility without revealing the method or any detail thereof.

This was done. After examining the system carefully the doctor wrote us that he did not believe it would prevent swarming, but, of course, did not explain why. Later he was given permission to do so, and then wrote us that the system would fail in swarm prevention because it did not provide *drawn* combs, such as the extracted-honey man gives his bees; that in the matter of fitting the filled combs into sections and letting the bees fill them, he did not know, but had some doubts.

This letter of Dr. Miller satisfied us that we could not pay very much for the method. Further negotiations resulted in our securing the privilege of examining into it ourselves with the privilege of placing it before our readers.

We would not go so far at this time as to say there may not be some possibilities in the plan. It will pay every one of our readers to go over it carefully, for it is not only exceedingly interesting but it suggests a train of possibilities that may be worth developing. Here is the article:

Once upon a time a patient said to me, "Doctor, I owe you a little bill. I haven't the money to pay you, nor do I know when I shall have any. If you could use a stand of bees I might accommodate you."

It has always been my policy to take whatever I can get. So I took the stand of bees. It was an old-fashioned box hive. The man said that he had always intended to transfer them to a patent hive; but—he was afraid. In fact, he had been afraid to rob the bees. The hive was a sectional affair, about five feet high, and his wife explained that for two or three years preceding she had always urged "Henry" that the bees needed room. Then Henry would make another section, slap it on, and—run.

I had always been vaguely interested in bees, credited them with almost supernatu-

ral instinct, yet knew but very little about them; but now the interest became acute. I hastened to the public library and secured what books I could find on the subject. I also subscribed to the various periodicals on bee culture, and, as a natural sequence, was soon in the toils of the supply manufacturers. After the most careful consideration and judicious selection a beginner's outfit was ordered. I remember with what feverish impatience I awaited its arrival. Several tracers were sent after the shipment (unnecessarily, I have no doubt). When it finally arrived I went to work and transferred the bees *secundum artem*. Dear me! what a mess it was! hundreds of the poor little workers succumbed to my inexperienced brutality—the more brutal because of my own fear and trepidation. That her royal highness did not perish was a wonder. However, in a crude way I succeeded, thanks to the industrious workers, in repairing the damage I had wrought.

The bees did well; in fact, I raised more bees than honey, so that by the following year I had six thrifty colonies on the rear part of a town lot, and began to resent the term "beginners" so often met with in the books and journals, as applying to me. My neighbors began to complain; but being now thoroughly inoculated I concluded to remove to a country town. I chose to ship my goods on a boat up the Illinois River, thinking that it would be easier on the bees; but when I followed the last load down the levee I was met by the drayman who asked what he was to do with the bees, for the captain wouldn't receive them. In surprise I inquired why. "I don't know," said the drayman; "he simply swore, and, I believe, is swearing yet; but I got one hive on all right before he stopped me."

I went on board, hunted up the captain, and, when I asked why he would not take the bees, he replied with a string of oaths which, in the way of emphasis and vehemence, I have no doubt was quite artistic, but did not answer my question. In an effort to conciliate him I gave every assurance that the bees were well packed, and could inconvenience no one. Then the captain made some very pertinent remarks:

"Yes," said he, "that's what the beekeeper also declared who shipped bees on this boat several weeks ago. Well packed! yes, may be they were; but when a roustabout knocked a hive off the stack it smashed. The whole air was filled with angry bees, and every d—d nigger jumped into the river. We shoveled the busted hive into the

river, but the bees stayed on board looking for it, or the niggers—I don't know which. The upshot was that we had to tie up there for nearly a week until the bees quit bothering before the niggers would venture on board again to work the freight. No, thank you; bees don't go on this boat again, even if you paid double freight."

It was useless to argue. I was obliged to sell the unshipped colonies at a loss.

One colony, however, came through all right. That, in the course of time, increased to some thirty; but my new locality, though affording more elbow-room, was really a poor one for honey.

Some three or four years ago, when feeding back a lot of seraps in a super, I observed, after a time, when every brood-frame was doubtless filled, that the bees no longer took the honey down, but, instead, fastened the seraps to each other and to the vessel in which I had placed them. This gave me an idea. Instead of compelling the bees to build in the small sections, toward which they seem to have a natural antipathy, why not permit them to do the principal work in the extracting-frames, then cut it out in suitable plugs, or squares, insert into the sections, and put them back on surcharged hives to fasten up?

With feverish haste I selected a few well-filled extracting-frames, and, in a crude way, cut out a number of plugs just the size of my sections, slipped them in, and set the sections over the same hive. The following day I took them off, and, lo and behold! they were all firmly fastened. It is true that the job was not a neat one. Some had toppled over, owing to the fact that the lower cut had not been exactly at right angles with the surface; others, for the same reason, were fastened in rather crooked; but they were all nicely fastened. Moreover, wherever the sections had been smeared with honey they were licked dry, and not a speck of propolis was to be seen; they hadn't had time to daub them up.

I figured that it would be cheaper to put in full sheets of thin foundation in shallow extracting-frames, just the size to yield four sections; and that with special knives rigged up in such a way as to cut out the plugs accurately with one stroke, slipping in the plugs, putting on and taking off would be preferable to putting foundation into the sections separately and scraping off the nasty propolis. Moreover, every section would be filled—no half-filled sections, some with merely a dab of honey. Last, but not least, the well-known preference with which bees fill large frames to small sections would insure a larger yield of section honey: furthermore, swarming could

be controlled, even as in the production of extracted honey.

The following winter I devised and constructed a machine consisting of a set of five knives screwed four inches apart upon a common pivot. These knives puncture the comb just beneath the top-bar, when a gentle pressure on a foot lever forces the blades through the comb to the bottom-bar. The comb is next slipped back off of the knives before the foot releases the pedal. This completes at one stroke the five vertical cuts. The machine is made large enough to hold a superful of combs, and to fit snugly on a tin pan which catches all of the honey drip. The horizontal cut is made by a pair of knives mounted in one handle four inches apart. For this purpose the comb is laid upon an inclined plane, whence the honey may flow into any vessel, and where the sections may be slipped over the plugs of comb after being slightly separated, allowing space for thickness of the sections.

Being ready for business I impatiently awaited the next honey-flow; but the following year proved an absolute failure in my locality. Then, very much like a grazing horse that always thinks the grass in the distance is better than that near by, I moved again. This time I chose the northwestern portion of Missouri, when, lo and behold! the drouth there the following year (1911) was so severe that the bees had a struggle to maintain themselves. Completely discouraged I turned my attention to professional matters, and left my pets in the care of inexperienced hands. The consequence was that many of them went into winter quarters with insufficient stores.

With the following spring my interest reawakened; and hoping that I might try my experiment on a larger scale I again looked after my bees personally; but, alas! over half had perished, and the remainder were too weak to make a fair test. Any way, the spring of 1912 was little better in that locality than 1911. However, the fall flow was some better, and I found it possible to make the test. My first difficulties were in finding but few of the extracting-combs, which I intended to cut into sections, as perfect as I desired. Owing to the inexperienced help, many of those frames (filled with full sheets of thin foundation) had been on the hives too long during the two failing springs preceding, consequently some had been but partially built out, while others had been gnawed and disfigured. The imperfect combs did not prove to be as much bother or loss as an equal number of imperfect sections would have been, for they were all extracted, though the first ex-

tracting had to be performed with care on account of the thin foundation.

After selecting the best combs, my son and I went to work. The first step was to slide the comb so the five knives simultaneously penetrated it just beneath the top-bar, then a downward pressure of the foot on the pedal forced the knives through to the bottom-bar, completing the vertical section. Then, slipping the comb back, it was laid upon an inclined slab (which drained into the uncapping-can). Now the two knives mounted four inches apart in one handle were inserted and the longitudinal cut made. This double operation was made in less time than it takes to describe it. But the following steps were a little more tedious. The plugs had to be slightly separated to permit room for the thickness of the sections. However, the plugs fitted exactly; but I discovered that, if the slab were hinged in such a way that it could be raised into a vertical position, thus facilitating taking off the filled sections without fear of having the plugs slip out, it would be quite an advantage. Yet I worried along very nicely. In placing the sections in the supers I tried to overcome another difficulty; it has been my experience (and, I believe, every bee-keeper's) that bees will wax up or propolize any contiguous parts; but where there is bee space it will take some time before they will get to daubing. Here's where I spent a lot of useless time. At first I had driven nails through slats to rest in the bottom of the supers with the points projecting upward about $\frac{3}{8}$ inch, intending to set each section on four nail-points, and as far apart. (I had a number of large supers, made to fit the Dadant hive, otherwise this would not have been possible). Thus I expected that, if there were any daubing at all, it would be only at the nail-points; however, this was a failure. Too much time was wasted in placing the sections, and the care required in handling to prevent toppling over. Then I resorted to a modification of the old T tins; but instead of being shaped thus  I enlarged the center fold thus  so the requisite bee-space was secured, and the sections could be quickly placed.

Now, in my impatience I chose six of my strongest colonies and put two supers on each to be sealed. In twenty-four hours I removed them. Yes, they were all fastened; a few plugs had toppled over, but, alas! many cells had been emptied. I had neglected to gorge those colonies first, thinking that, as they were the most populous and wealthiest of all, they required no preliminary treatment. Somewhat discouraged—yet determined to hold out—I proceeded to

gorge three colonies and tried again with better success; and, being also more careful about the longitudinal cut, so as to get it square, and at right angles with the surface, none toppled over. Ah, the beauty of it! though the sections had been daubed with honey they were all licked clean, and not a speck of propolis. Only one doubt remained—were those plugs sealed as firmly to the wood as otherwise? Apparently, yes; but after a little rough handling at the store two dropped out. Hereupon I left them on 36 hours instead of 24, with better results.

Such were my results, but what avail? Most of my bees had perished; and, considering the uncertainty of season and locality, I chose to devote my whole time again to my profession. My son also, who, I hoped, would become a successful apiarist, determined instead to become a machinist. To perfect himself in this his ambition turned to the metropolis, where opportunities and facilities existed. Having but one son I dreaded an early separation, so I completed the circuit and moved back to St. Louis.

Not being in position to test this method of comb-honey production any further I give it to the public for what it is worth. I am convinced, however, that any one in a fair locality would soon become proficient with this method. Practically the bees would be treated the same as in the production of extracted honey, with the exception of the hives utilized for fastening and finishing up. Yet with those, though being gorged, could be given plenty of super room and thus discourage swarming. Some more experience is necessary to ascertain just how long the finishing process should last to secure best results. I had as many as six supers at once on the strongest colonies. It seemed that better results were secured with four or six supers than only one. The more dripping honey there was to be cleaned up, the less space they had left to put it. As to the fastening up, it really seems to be instinctive. The bees themselves appear to dread any loose combs or parts.

St. Louis.

[Before negotiations had been completed by which we were to publish the article, and after securing Dr. Miller's opinion, we in turn wrote our own "opinion," a part of which is given herewith:

Mr. Geo. A. Humpert:—Your favor of July 12, with the enclosure of article describing your system of comb-honey production and swarm prevention, together with letter from Dr. Miller, was duly received. We don't wonder that it seems fascinating to you; and unless one has had a very large and extensive experience, and opportunity for extended observation, he might be misled, just as you were in part.

We have been over Dr. Miller's letter that he has written to you, and would endorse every thing he says, especially where he says your plan would not prevent swarming. Your scheme is based on the idea that, when running for the production of extracted honey, there would be little or no swarming. This is correct when the hives are properly managed—that is, providing that empty drawn combs are given the bees fast enough, or, rather, often enough, so that at no time are they ever crowded for room. But your plan does not contemplate the scheme of giving extra room. You produce your honey in the first place in shallow frames. This honey must be built off from thin super foundation, and in that respect you are no better off than if the combs were drawn out and filled with honey in sections. Now, this may be a new fact to you; but we have been producing comb honey in shallow supers for the last six or seven years. We are mailing you under separate cover a sample of our cut comb honey, such as we have been supplying to the Pullman-car trade during that period.

Naturally enough, we supposed, as did you, that when we produce extracted honey in shallow frames we would reduce swarming; but in this we were very greatly disappointed; in fact, we can see very little difference between the behavior of colonies drawing out foundation in shallow frames and colonies drawing out foundation in sections. The one seems to be almost as bad as the other in respect to swarming. But, on the other hand, if we can give shallow extracting-combs, *already drawn out*, mind you, there will be little or no trouble from swarming, providing these supers are put on often enough to give the bees room as fast as they fill one set of combs. The theory of swarm prevention in extracted honey production is empty combs all ready for the bees. On that point Dr. Miller is exactly right. The thing that makes bees start to swarm is building combs, simply for the evident reason that they have not any store room ahead. When that condition arises, and the hive is a little crowded, swarming is almost sure to be the result. Bees seem to be disinclined to build comb, and they will swarm before they will do very much of it—that is, unless other preventive measures are employed.

In your letter to us, however, you say that the matter of swarm prevention is not your only idea. We can readily see that. It involves the old scheme of producing comb honey by a plan which you believe will give perfect combs, free from soiling, by making the bees attach those combs to sections after they have been drawn out and capped over.

Right on this point it is our belief that you would not be able to get the bees to attach these combs to the sections as firmly as if they had been built there in the first place. The very fact that some of the combs dropped out in shipping is rather an indication of what might happen if a few cases of comb honey produced in this way were shipped long distances as ordinary comb honey has to go.

Now, we have spoken rather frankly, and in a way that almost indicates that your invention is of no value. So far from believing that, the fact that we have been using something along similar lines would indicate that we do attach some value to cut combs, not on the plan that you employ, but on the plan that we use in putting them into cartons and then wrapping up afterward. Combs will ship in cartons very much better than they will in sections. You see we have a saving over you in that the bees do not have to attach the combs to any thing. We simply cut them up and then put them into cartons and wrap them up.

Taking it all in all, we think you will see that the plan we have been working upon is an improvement on yours in that the combs do not have to go back into the hives to be attached to the sections. We simply produce shallow extracted honey, cut it up afterward, and then wrap it up as shown in the

article in *GLEANINGS* for Dec. 15, 1909. This plan has the advantage over the one that you mention in the fact that comb honey can be shipped in this way around the world, because it is not attached to any thing. The difficulty with ordinary comb honey in sections is that the combs break away from the rigid support of the section. That is the reason why the comb-honey business has been going to the bad, and nearly every one is working toward the production of extracted honey.

E. R. Root.

As stated in this letter, we have had a great deal of experience in cutting up extracting-combs into small squares or plugs for the Pullman-car trade. This plan was illustrated and described in our issue for Dec. 15, 1909, as already stated. Since that time we have continued the business of comb-honey production, but not on the regulation lines. We found a considerable demand for these cut combs, especially for fancy restaurant and dining-car trade. We have not attempted to cut comb honey in squares weighing a pound or more, but have only catered to the trade that calls for individual service of comb honey—that is, little chunks weighing between two and three ounces. Well, having been at this business for the last seven years, the scheme of producing comb honey in shallow extracting-frames was a rather old one to us. We have not, however, tried the plan of cutting the combs of just such a size as to fit neatly the common section honey-box. Without having tested it, it would be our opinion that these combs would not be as stable in the sections as those built there in the first place; that the cut comb afterward fastened in the section would have a sort of stuck-in look—that is to say, it would not have the finished appearance of a nicely built comb that has been built in the sections from foundation. However, we are open to conviction; and if Dr. Humpert has struck upon a new and simpler plan of producing section comb honey we feel sure that the beekeeping world will be glad to pay him for it. While he may be able to secure a patent on the appliances for cutting the combs, he could not very well protect himself on a patent covering the method of letting the bees fasten the cut combs into sections. Honest beekeepers, of course, would pay the doctor a royalty; but thousands of dishonest ones, and others who might claim the idea was old, would disregard his rights, secure in the belief that he would never know that they were purloining his invention.—ED.]

Comb Honey, 214 Lbs. from One Colony

This has been a fine season. I have taken 440 lbs. of comb honey from five colonies, my best giving 214. I think that is good for one in the A B C class. Springfield, Ill., Sept. 2. A. C. BAXTER, M. D.

A COLONY OR TWO OF BEES

How They May Reduce the Cost of Living

BY W. R. COMINGS

[The writer of the following article, Mr. W. R. Comings, superintendent of the public schools of our neighboring city of Elyria, a place of 15,000 inhabitants, deserves more than passing notice. Mr. Comings was formerly superintendent of our own Medina schools, and during that period; in the late 70's and early 80's he had much to do in shaping the future policies of a number of the boys, particularly of ourself. It is not too much to say here that we feel more indebted to him for our educational training than any other teacher we ever had. Always up to date, he is most of the time a little ahead of the world. His schools in Elyria show that in every room. Well, when he took up beekeeping, it was presumed, of course, that he would use modern methods at the start, and he did. Not only that, but his progressive mind has been looking toward new and old fields. He writes:—ED.]

Why do I keep bees? First of all, for the fun of it. Second, to reduce the cost of high living, or, rather, to have a taste of high living without any cost.

Formerly the annual purchase of honey for the family was not above half a dozen pounds a year. Honey was a luxury, and rather expensive, as I fancy it is to a great many people. But if bees would pay their own way, why not have honey in plenty? And then I had a little sportive desire to see what I could do with bees, and so last year a colony was ordered of my good friend Root.

The interest I have taken in those bees has amply repaid me, for all along it is a bit of nature study with an incentive. But I have nothing new to add to the beekeeper's lore. I have an argument to present. But first let me remark that there were many dark forebodings about those bees. The good wife had visions of their flying straight into the faces of all the neighbors and the neighbors' children, and there are no less than six families living within sixty feet of that miniature apiary. But no one has been stung besides myself, and one is soon immune to the poison-punctures.

Well, that colony doubled the first season and produced sixty pounds of delicious sweetness. This year the two colonies increased to four, and the season's crop was 285 pounds. Enough honey has been sold to eliminate all costs, and there is honey on the table every day. Hereafter my honey costs me nothing.

Are not these facts sufficient justification for my preaching, which is that every householder should keep a colony or two of bees. They make little work, occupy almost no space, turn out a good product, reduce the cost of high living, eliminate largely the craving for expensive sweets and chocolates,

and provide a diversion for the tired man after business hours or on holidays.

The next step might be a goat or two if one cared to go that far; but I stop with the bees, and shall continue to buy milk as long as possible.

Elyria, Ohio.

SHIPPING FULL COLONIES 1000 MILES BY EXPRESS

BY M. A. PETERS

While living at Spring Valley, Ohio, in the spring of 1910, I was the happy possessor of 72 fine colonies of bees that had wintered in fine shape. If I remember rightly, there had been some willow and dandelion bloom. I suddenly decided to move to Ft. McCoy, Fla., and take 42 colonies with me. The problem arose as to how to ship them. The railroads would not accept them by freight, and eight-frame hives partly full of honey were too expensive to go by express. Therefore I resolved to use light shipping-cases $\frac{3}{8}$ x 4 inches wide, and the snug length of a Hoffman top frame bar. The sides were to be made of wire cloth, and tacked every $1\frac{1}{2}$ inches. Those cases were made two inches deeper than the frames. There were cleats nailed inside of both ends high enough to make the frame level with the top.

One frame one-half or two-thirds full of honey and some brood were put in each case, directly in the center. Each colony was carefully shaken into the case; the lid nailed, and two screws put down through into the top-bar of the frame to prevent turning sidewise. About ten of those were nailed into a light skeleton crate ready for immediate shipment by express. Empty hives had been sent on ahead by freight to receive those when they arrived at their destination. The hives containing combs were sent on immediately after.

The bees arrived at their destination not much the worse for their long ride, although it seems to me that it would have been better if they had been provided with a little water, as they seemed very thirsty when turned loose.

Bees properly crated in this manner could be safely shipped 2000 miles. Plenty of sealed honey must be provided for such a trip, as the consumption of honey seems to be considerably above the normal.

I shipped by freight several hundred fine newly drawn combs wired four times across. Those came through with scarcely a break. I put about 100 into a box, and packed them very tightly.

Fort McCoy, Fla.



George Zautner and family, of Albany, N. Y. Another view of Mr. Zautner's apiary is shown on the cover of this issue. See editorial.

AN OLD BUT VERY EFFICIENT FRAME-NAILING DEVICE

BY J. L. BYER

While beekeeping has, no doubt, kept pace with other industrial pursuits during a number of years, shown by the many new things that are constantly brought to our notice, yet every once in a while some old device or plan will be found that, after all, is better than the modern methods which are supposed to supersede the more ancient ones. The frame-nailing device illustrated here is in this class; for while my grandfather and his brother used this forty years ago, I have yet to see a better plan, although I have seen a great many other devices for this purpose during the past ten years or so. Indeed, I doubt if there is another one as good as this, all things considered, as frames nailed in this device are absolutely *on the square*, and a good smart operator can nail up quite a few hundred frames in a day, and work in a position that is not tiresome to him.

Figure 1 shows the front of the device. The only movable parts shown in this picture are the lever at the bottom right-hand

corner, and the two pieces about six inches long at the top, marked each with the large crosses. The block inside the four corners designated *a—a* is the exact inside measure of the frame. The foot lever at the bottom is shown raised up, and the holder is ready for the frame in the flat to be placed ready for nailing. The top-bar is laid flat in the space at the bottom of the block marked *a* at each corner, and the end-bars stand upright in the grooves shown at the ends of said block. The bottom-bar is placed in position on top of this block; the foot-lever is pressed down, and the two strips marked with *x* clamp the frame solidly for nailing. The frame is now nailed; and then when the foot lifts the lever at the bottom, the job is done. It takes much more time to describe the process than to do the work, as an active nailer can at least run one a minute.

The two smaller crosses, lower down, show a shelf for nails which is divided into two compartments, one for the small nails and one for the larger ones for the top-bars. The device should be constructed so that the top leans away from the bottom at least eight or ten inches out of perpendicular, and the front should be of inch lumber.

I might add that the block referred to,

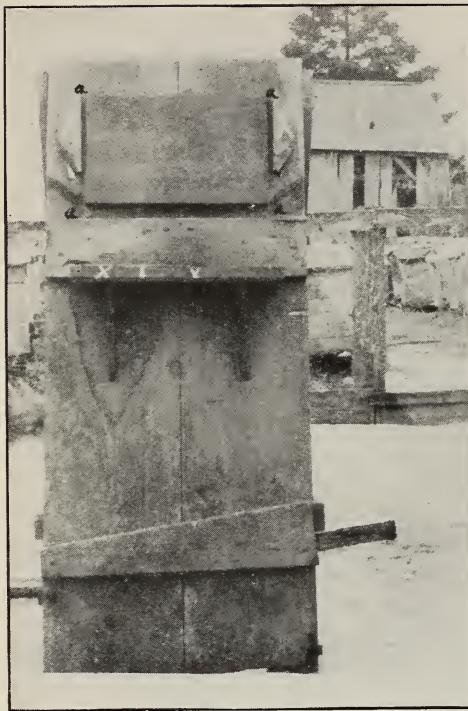


FIG. 1.—Front view of Byer's nailing-device.

and marked at each corner *a*, is simply made of a piece of inch lumber the exact size of the inside measurement of the frames to be nailed, and is fastened to the other boards that extend from the bottom upward.

Figure 2 shows the rear of the machine, and I think it is made so clear that little explanation is necessary. The strip from the foot lever up to the two diagonal pieces in the center is made of a heavy piece of band iron. It is fastened at the bottom with a small bolt, and the two pieces above are sawed so that there is an inset to allow the iron strap to enter them about two or three inches. Small bolts fasten them to the iron. At the top, each one of these diagonal pieces is fastened to the pieces shown on other side, marked *xx*, by wooden pins. When the lever is pressed down these pieces move down in the grooves as shown in the left side of Fig. 2, and so firmly lock the frames to be nailed that they can not move while the nailing is going on.

A REMOVABLE PORTICO FOR WINTER PROTECTION.

At different times I have mentioned the name of J. F. Davison, Unionville, Ont., as a beekeeper who believed in a low temperature for cellars in which bees are being wintered. Whether right or wrong, it is quite evident that for his cellar it is all right, as

he invariably winters his bees in first-class order. In addition to the bees wintered in the cellar, he also winters about as many outdoors, and the picture shown illustrates the plan he uses to protect the entrances from wind, snow, and also to keep the sun from shining directly in the entrance on days when cold winds are blowing but when the sun is quite warm, enticing the bees out only to perish as fast as they come out. The bottom-boards of the packed hives project about four inches, and the porticos shown rest on the bottom-boards, and project out at the bottom about two inches further than the bottoms of the hives. This allows the bees to carry out their dead; and if by chance the beekeeper is away and a warm day comes, allowing a good flight, the bees can find their way back to the hive. The portico always insures an air-space next to the entrance, no matter how much snow may be piled over the hives; and it is an effectual preventive of cold winds blowing in at the entrance. The sides of the portico rest on the bottom-board of the hive; and on the top a piece of band iron screwed fast to the hive is bent so as to turn down over the portico and hold it in place. The hive marked with a cross shows the "button" turned down in place, while the one at each side of this hive shows the

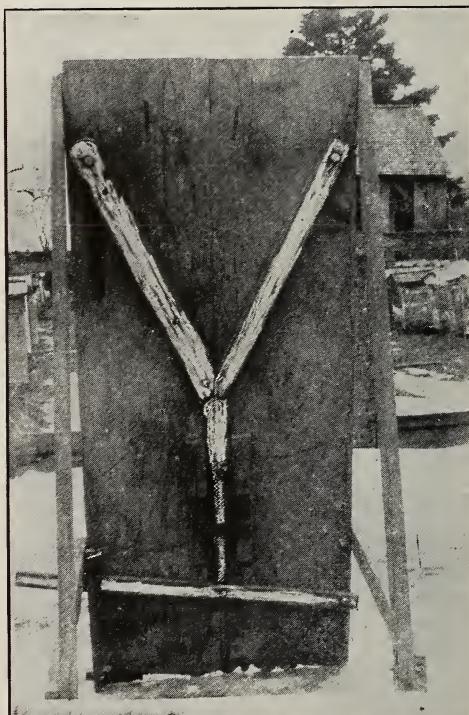


FIG. 2.—Rear view of Byer's nailing-device.



Apiary of J. F. Davison, Unionville, Ont., showing the removable portico for winter protection.

pieces of iron turned to one side and the portico ready to lift off the hive. These porticos have been used in this apiary for a number of years, and are as good as anything I have ever seen for the purpose intended.

Note the nearness of buildings—apiary right in the center of a village, which shows careful handling on Mr. Davison's part, as the bees have been there for many years.

Mt. Joy, Ont., Canada.

A FEW WORDS IN DEFENSE OF WINTER AND SUMMER SHEDS

BY L. LIST

The Jan. 15th issue contains a severe criticism, p. 55, of the combined winter and summer shed described by me Dec. 1, page 766. It never entered my mind that the shed described should be the *ne plus ultra* in wintering contrivances. It is, however, quite satisfactory for a busy man who, because of other more pressing duties, can not, like the professional, aim to get from his bees "all there is in 'em." Of course it has a few drawbacks. I do not use this kind of shed myself, as Mr. G. could have noticed by carefully going over my words. I have regular cases for winter (see illustration), and shade-boards for summer. Still, I consider this shed of interest to some of the thousands who read GLEANINGS. Mr. Greiner himself, though he utterly con-

demns the whole thing in some sentences, and warns beginners not to adopt it, at several other places offers suggestions how it may be greatly improved.

I still believe that many of our small beekeepers, especially in the country, would do well if they, without much trouble to themselves, would protect their bees according to Mr. Knoll's way. Mr. K. is a prosperous, busy farmer, and only his spare moments can be devoted to bees. Thousands of other beekeepers are in a similar position.

But let us look at a few of Mr. G.'s objections. He considers straw poor packing material. For four successive seasons my bees were packed that way, and during that time but one colony, weakened by disease, was lost. No kind of packing could have saved it. Straw, by the way, comes through the modern thrasher in pretty fine shape—plenty of chaff in it too. And if it were not broken up, wouldn't it then give us innumerable dead-air spaces between the hive-body and the outer wall? Last year's winter was certainly a most trying one. Mr. K.'s bees came out in fine shape. So did mine. Another objection: Hives can not be easily manipulated. True, not so easily as when spread out in the open. But it can be done fairly well. I went through every one several times last summer, removing every frame. I admit that the bees are likely to be stirred up a little more than when they are entirely separate. But Mr. G. himself



Winter cases as used by L. List, Detroit, Mich.

says that one would not notice it very much in the sheltered position behind the shed.

Finally, the suggestion regarding a change in construction to keep out rain and snow is quite superfluous. Rain and snow have no chance to get inside of the shed, though it appears that way in the picture. Let me explain. That photograph was taken in the middle of summer, and the hinged front was simply let down for a few minutes, the hives being left standing apart. For winter they are moved close together. From one long and several short pieces of $\frac{3}{8}$ -inch stuff an entrance is made $\frac{3}{8}$ by 5 inches. Then a narrow board, just wide enough to fill out the space between hive and wall, is laid on top of these entrances lengthwise, inside of the shed. The space above is filled with straw. Last winter we had many a driving snowstorm from the east, the direction in which the sheds are facing. No snow ever got inside.

Detroit, Mich.

A WINTER CASE FOR TWELVE HIVES

BY J. F. ARCHDEKIN

Having sustained serious winter losses in my apiary a number of times, I have been compelled to adopt some method of protection for the bees. While I have had excellent luck in wintering in the cellar, my last winter's experience with the cellar was dis-

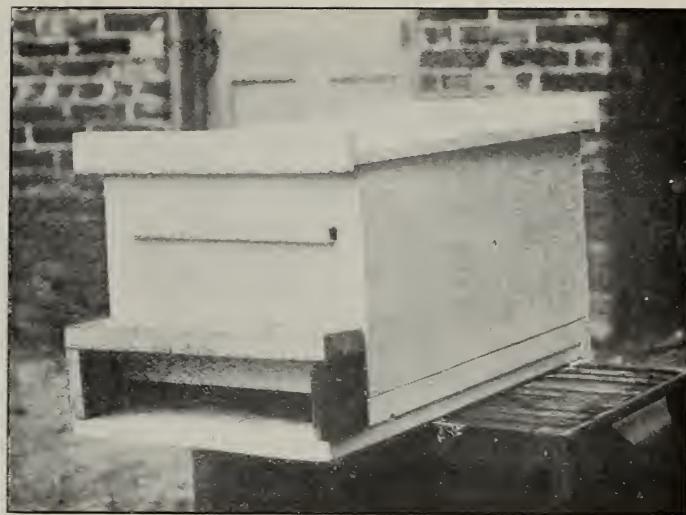
astrous. But bees outdoors need protection. Although I have wintered bees on their summer stands in common single-walled hives with no loss, yet at other times I have had severe losses by this method also, and feel that this is to be discouraged as much as possible. The following is my way of making a winter-case. The only claim I make for it is that of cheapness and simplicity of construction. These are, in the writer's opinion, very important if they can be combined with ample protection.

Expenses make the profits smaller, and, after all, it is profits that most of us are after. An ordinary person can make a case to hold 12 colonies (eight-frame) in less than an hour. The materials required are four boards $1 \times 12 \times 18$ (for 12 colonies): one $2 \times 4 \times 12$; about 70 feet of $1 \times 6 \times 18$ boards, and enough roofing-paper to cover as many cases as required. The 12-inch boards are nailed together with cleats, and form the front and back of the case. The front is now marked off, allowing 18 inches for each hive. In the center of each space, from left to right, the entrance is made $\frac{3}{8} \times 8$ inches. Cut the 2×4 into four pieces 36 inches long, and, selecting a level piece of ground, lay them flat and use the six-inch boards to cover them, forming the floor. The sides are set up, the ends boxed up, and a lath nailed across in the middle on top to keep it from spreading when the

packing is put in. The front should be set back three inches from the edge of the floor to form the alighting-board. This can be seen in the illustration, which shows the complete case. The sides should be toe-nailed to the floor in a few places to prevent spreading at the bottom.

The other picture shows the entrance cover which connects the hive entrance with the outside entrance, and allows packing the front of the hive. It should fit over the front of the hive-bottom instead of resting on it as in the picture, and extend forward

$1\frac{1}{2}$ inches further than the bottom-board, so that the bottom-board may not stop up the outside entrance. If it is made this way it will prevent mice getting in the hives from the packing. In practice the entrance cover is slipped over the hive entrance, and the hive pushed forward so that the cover fits tight against the hive and the case. The case is two feet high, and gives room for a comb-honey super on the hive, which is filled with packing with a piece of burlap over the frame. I put a cover on the super and



Entrance protector to fit over the front of the bottom-board. This keeps the packing material in the winter case from filling up the entrance of the hive.

leave a small wisp of straw under one side so as to give some ventilation upward. Packing is put on top of the hives, and rounded up slightly, and the roofing paper is then put on. The case should measure 31 inches wide outside.

When spring comes one can tear down the case, and use the boards for other purposes, or store them away out of the weather for future use.

St. Joseph, Mo.



Winter case for twelve colonies.



FIG. 1.—One of Scholl's hive groups ready for the supers on the wheelbarrow close at hand. See "Beekeeping in the Southwest" for last issue.

TWO SUCCESSFUL EXPERIMENTS IN INTRODUCING QUEENS BY THE SMOKE METHOD

BY C. D. CHENEY

There being just now considerable mention of the Miller smoke method for introducing queens, the following may be of interest:

One Saturday a thorough examination of No. 9 was made. One fine frame of hatching brood was found, but not an egg nor the queen. Not being entirely satisfied, another examination was made on Monday, with the assistance of another person, but the results were the same. There were no eggs, no unsealed brood, and no queen. The colony was of medium strength. I mailed an order for another queen (it being then

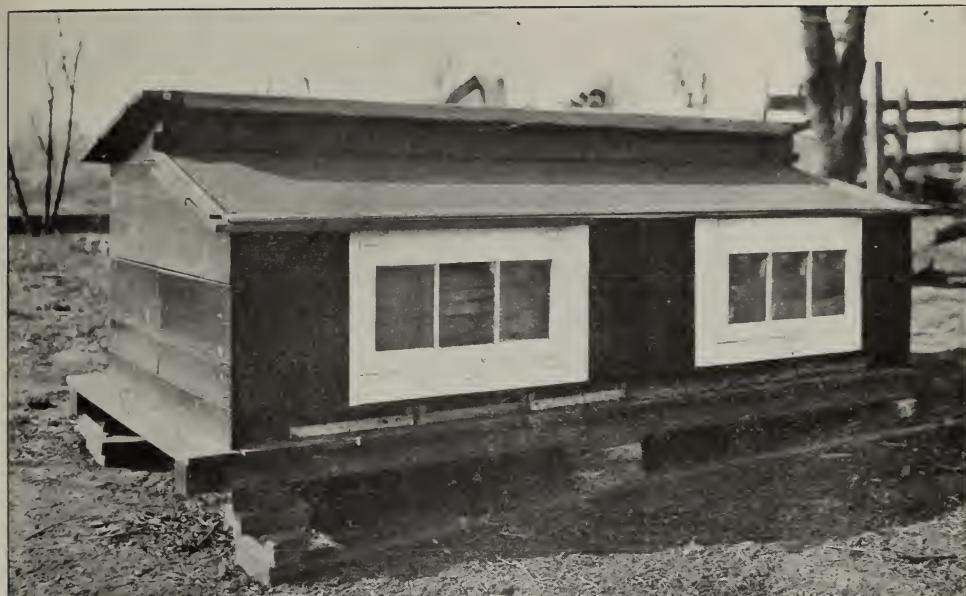
Aug. 25), after which I watched that hive. After a day or two I became convinced there must be a queen there nevertheless.

A queen came by mail on Saturday. The weather was hot and sultry, and the queen appeared very much exhausted. She was very large, evidently having been taken off the combs while actively engaged in laying, and had suffered severely in consequence.

Before introducing the new queen I decided to have another "look" for the original queen, and, sure enough, there she was, looking as fine and prosperous as could be desired. However, as it appeared that she was not "on her job" I caged her, and within 20 minutes "smoked" the new one in. I observed that she was very sluggish but I hoped she would revive when again placed among natural surroundings. On



FIG. 2.—Scholl's group of five hives with supers and covers placed on in a "jiffy." See "Beekeeping in the Southwest" for last issue.



Chicken colony house containing colonies of bees packed for winter.

Monday I opened the hive, and almost at once found her. She was barely able to cling to the comb, and within a few seconds the bees surrounded her rather roughly, though a little smoke dispersed them. A further search disclosed about a dozen queen-cells, each well extended and containing a larva. I destroyed every cell, and closed the hive. Then I sat down to think it over about as follows. The smoke introduction was very evidently a success; the bees must have recognized at once the condition of the new queen, and gone to work actively and very promptly to avoid probable queenlessness. The original queen must have begun laying between my second and third examinations, whereby the colony had eggs for the queen-cells. The new queen is a "goner." The original queen looks fine, and is this season's hatching. There is only one thing to do—put the old lady back on her job. Upon lifting the cover there was the new queen on top of the frames, without an attendant, just able to crawl. She was caged with four or five bees which appeared to attack her in the cage. The original queen was then smoked in at once. That was on Monday. Another examination on Friday showed the queen perfectly at home, and with a very good start at brood-rearing. Every vestige of the dozen queen-cells had been removed and all the breaks repaired.

This little experience presents two points for consideration, viz.: Two successful in-

troductions with smoke under trying conditions, and the risk in mailing queens right off the combs while distended and heavy with eggs. A rest of at least 24 hours might prevent much dissatisfaction and loss.

My regret at losing the queen (representing a good dollar) is considerably tempered by my success with the introduction. This method (which should be named the Miller) is such a saving in time, and appears so logically safe and correct, that I shall practice it until I get a jolt or until something better comes along, which doesn't seem likely.

New Jersey.

WINTERING TWELVE COLONIES IN A CHICKEN COLONY HOUSE

BY J. NIELSON

The illustration shows a cheap way of packing bees. The colony house is used in summer for chickens, and makes a fine place for bees in winter. This one house holds 12 eight-frame hives, six facing east and six west, with four inches of kiln-dried planer-shavings packed around them. The cover of each hive is taken off, and a tray with a burlap bottom over a two-inch bridge across the frames put on instead. The tray is filled with shavings, and then a tar-felt cap put over; so if the weather should prove bad when I take the hives out they will still be well protected against cold spring rains.



Apiary of Elias Fox, Union Center, Wis.

These were all given a good feed of sugar syrup with two parts of sugar and one part of water, and all just brought to a boil on the stove. There has been brood-rearing going on all winter here, and my bees that I have packed away in this colony house are stronger now with bees than last December, when I packed them. I got from two to four supers of comb honey per colony, selling at \$4.20 for 24 sections without crates, and \$40.00 worth of extracted honey. I had ten colonies last spring, and five of them were very weak.

Plattsmouth, Neb.

A TEN-ACRE FARM PAID FOR BY THE BEES

BY ELIAS FOX

Under separate cover I am sending a photo of my home here, showing a portion of my apiary. Only little over half the yard shows. I could not get it all in on account of the fence at the lower side. Neither could I show the honey-house, which stands at the right, just out of sight, in front of me. It was my intention to have the picture taken before the extracting-supers were removed, but the photographer was away.

I have here a ten-acre farm bought by my bees. My crop during 1912 was 10,500 lbs., principally all clover, from 100, spring count. I wintered 143 colonies in the cellar under the house, in No. 1 condition. My best colony gave me a surplus of 235 lbs. of honey, and swarmed besides. There was also plenty of honey left for winter.

Union Center, Wis.

A GOOD BEE-CELLAR A PAYING INVESTMENT

BY E. S. MILLER

In making a bee-cellars I would recommend the use of solid concrete—not cement blocks or brick if it is to be in clay ground, for the reason that they crack apart by action of the frost, and let in water. Nor do I believe that, as a rule, it will pay to use wooden construction anywhere if one owns the land and expects to continue in bee-keeping. I would have a cement floor sloping to a drain at the center; a ceiling lathed and plastered, and made as nearly air-tight as possible; double window shutters and doors. There should be a good honey-house above, and a chimney extending from the cellar-bottom on the east or leeward side to take the air from the bottom of the cellar.

A snbearth air intake at least ten inches in diameter should reach from a point 100 feet or more on the west or windward side, and enter at the bottom.

The spaces between joists above the cellar should be filled with dry sawdust or other suitable insulating material. The cellar for 100 colonies should be 16 x 20. and 7½ feet deep.

Will it pay to build such a cellar? A good concrete cellar of this size, properly constructed, will cost approximately \$300. One man can put in 100 colonies in half a day, and take them out in the spring in about the same time. The cost of wintering would then be something like this:

Interest on investment at 6 per cent.....	\$18.00
Labor, putting in and taking out.....	3.00
Winter losses, 1 per cent.....	5.00
Depreciation of cellar.....	0.00
Depreciation of hives.....	0.00
Consumption of stores, 15 lbs. at 6 cts.....	90.00
<hr/>	
Total, 100 colonies.....	\$116.00
Cost per colony.....	1.16

Now figure the same items when bees are packed outside, counting interest and depreciation on outer cases, and remembering that the consumption of stores will be about double.

It would seem that a careful consideration of these items will show that it is much more economical to put money into good standard hives and a good cellar than to expend it for thin outer casings or double-walled affairs with the consequent additional labor, depreciation, consumption of stores, and losses of colonies.

Valparaiso, Ind.

THE COLOR SENSE OF BEES

A Series of Interesting Experiments Showing that
Angry Bees will Sting Black More than they
will White; Bees Not Reflex Machines

BY JOHN H. LOVELL.

Mr. A. C. Miller's recent article, July 15, p. 487, on the relation of bees to black, seems to invite a reply. No doubt the sense of smell is well developed in bees. Although it has not yet been shown to be better than the visual sense, Forel and others have held the contrary. Certain odors bees find pleasing, others offensive. Cases where irritated bees sting objects because of their disagreeable smell may be at once dismissed. Some time ago Dr. C. C. Miller quoted the editor of the *Irish Bee Journal* to the effect that persons not cleanly in their clothing are often badly stung. Such discrimination is certainly to the credit of the bees.

"Bees like black," asserts Mr. Miller. Lubbock and Herman Muller both claimed

that bees preferred blue to other hues; but there are to-day few if any naturalists who believe that bees find an esthetic pleasure in blue coloration. Black is produced by the absorption of all the rays of light. There are none reflected to give pleasure or pain. Life is dependent upon light; and an animal or plant placed in absolute darkness will soon perish. The terrible sufferings of convicts confined in the dark cell have been graphically described by Charles Reade in "It is Never Too Late to Mend." It would seem to be impossible to imagine how a piece of black cloth or a black box could give pleasure to any animal. There never has been furnished, nor does Miller furnish, nor do I believe there ever will be furnished, a jot of evidence that bees like black.

I do not believe that bees are reflex machines. They possess at least a small amount of intelligence, defining intelligence in its beginnings in the words of Forel and others as the power of associating different sense impressions and instinctively making simple inferences. Bees observe and learn from experience, which they subsequently remember. I can not for a moment suppose that Mr. Miller believes that the fact that black bees are not stung to death by Italians, or that black insects belonging to other families are not attacked by bees, is evidence that they either like or dislike black. Huxley, after perpetrating in his letters a pun or an ambiguous joke, not infrequently followed it by the parenthesis "(Now, that is a 'goak').'" Mr. Miller should have labeled the above statement "a goak." Usually, probably always, bees do not sting a black object unless it irritates or annoys them. A hive of gentle bees managed on the let-alone plan will hardly sting any thing.

The illustrations of black hogs and cows pastured near apiaries are not pertinent. The hives were fenced around with wire netting, and the animals could not come near enough to do any injury. Very likely they did receive some stings at first; but the bees speedily learned that there was no occasion for them to sacrifice their lives. A friend of mine keeps his hives, which are surrounded by a wire netting not over two feet high, in his hen-yard. When I last inspected them there were hens close to the netting; but neither hens nor bees paid any attention or manifested any fear of each other. It will be remembered that I hold that honey-bees neither like nor dislike black; but that, when angered, they will sting animals and human beings which are wholly or partially covered with black much more than they would if they were clothed in white, because they are more clearly seen.

Exception must also be taken to the statement that it is doubtful whether a sudden change from dark to light or *vice versa* affects a bee's vision at all as it does ours. The eyes of bees are of great size, and are highly developed. I know of no one else in America who has so carefully investigated their structure as Dr. E. F. Phillips, of the Bureau of Entomology at Washington. His figures show that each eye tube of the compound eye is connected by a nerve fiber to large and powerful optic lobes. There is, in my judgment, not the slightest reason to doubt that this highly specialized apparatus is strongly responsive to waves of light. Their impact incites molecular changes in the nerve fibers as certainly as a magnet influences the compass needle.

The experiments with the little house or tent of white cloth are of much interest in that they show that the flight of bees is influenced by the line of the horizon. In their endeavors to escape, the bees flew against the translucent walls always above the horizon line dimly visible through the white cloth. Buttel-Reepen gives an instance where bees at liberty showed by their manner of flight that they perceived the horizon line and were influenced by it. I regard this as good evidence that the compound eyes of bees can see distant objects.

In the experiment where there were four hives, one on the middle of each side of the room, I should attribute the ability of each bee to find its own hive to its memory of location. The late W. Z. Hutchinson once wrote me, giving an account of some observations showing that bees in their flight were strongly influenced by locality as well as by color. Buttel-Reepen also considers that memory of locality is very strongly exhibited by scouting bees. As an alternative there is, of course, the theory of Bethé, that bees are led back to the hive by an unknown force which draws them as a magnet draws steel. It is open, indeed, to the objection that there is no evidence of the existence of such a force. Or if one prefers he may believe with Fabre that they are guided by a sixth sense.

Personally I believe that bees flying out from the darkness of the hive see black objects much more clearly than they do white, which reflect all the rays of light. In the brilliant light of a mid-summer day a white object may easily escape attention. Our railroads do not use white signals in the daytime, but black. Newspapers and books are printed in black letters. In the arctic regions in winter, birds escape attention by their white plumage and mammals by their white fur. There are numerous instances where persons have attempted to pass

through a mirror, which largely reflects light, as through an open door; but no one, when the sun was shining, ever tried to walk into a black wall.

Mr. Crane did not exaggerate one iota when he said that it was the almost universal opinion among beekeepers that a black object is more likely to be stung than a white one. The recent articles by Mr. F. J. Cartan, of Oregon, and "The Beeman," hailing from New Mexico, show how widely disseminated is this view. The testimony cited in my paper was that of entirely trustworthy witnesses, including beekeepers interested in the subject chiefly from the commercial point of view, as well as the editors of GLEANINGS, Dr. C. C. Miller, Messrs. Crane, Townsend, and others. I infer from a personal letter received from Mr. Dadant some months ago that he also holds a similar opinion. Mr. A. C. Miller offers no reply to this evidence; he simply seeks to ridicule it. I am a naturalist; and while I do not consider it necessary to verify every observation when there is ample confirmatory evidence in its favor, yet when it is called in question it is my custom to appeal at once directly to nature by experiment.

The following experiments were made August 7, 1913, at 10 o'clock. The day was clear and calm, and the temperature in the shade was 80 degrees F. I was dressed wholly in white, but there was a black veil on my broad-brimmed straw hat. The white sleeves of my shirt were buttoned outside of a pair of yellowish-white gloves. Midway on the sleeve of my right arm there was sewed a band of black Cashmere cloth, ten inches wide, entirely encompassing the sleeve. No smoker was used, as it was desired that the bees should display their natural disposition.

Thus dressed I approached a hive of black bees, and, kneeling on the ground in front of the hive, I tapped vigorously with both hands on the top of the hive-stand. A large number of bees presently flew out of the entrance, many of which immediately attacked the black band on my right arm, while the left sleeve, which was entirely white, was scarcely noticed.

On the second story of this hive there was a super containing large pieces of partially filled honeycomb given to the bees to clean up. Standing on the west side of the hive, and facing the east so that the sun shone directly on both my extended arms, I lifted off the cover, and, introducing both hands into the super, lifted a piece of comb covered with bees and gently shook it. Instantly many bees flew toward me. A large number attacked the black band, to which

they were constantly coming so long as my hands remained in the super and disturbed them. An individual bee would not remain long upon the black band, but would soon fly against my veil, or circle about my head. So far as I could observe not a single bee attempted to sting the left white sleeve, and very few even alighted upon it. I closed the experience by walking away from the hive.

This experiment was repeated a second and a third time. During the second experiment I estimated the number of bees on the black band at a certain moment about thirty (I intentionally make the estimate smaller than I believe it to have actually been), while the left sleeve was almost wholly unnoticed. As in the previous experiment, the bees soon flew from the black band to the black veil, or circled about my head. So fierce was the attack that I found it advisable to withdraw to some distance. My third experiment yielded similar results to the two already described. I can not imagine how certain of the bees could have made greater efforts to sting the black band than they did. They seemed fairly beside themselves. To that part of my dress which was white the bees gave very little attention.

I now deemed it advisable to have a witness. A friend was summoned, and provided with a black veil and a pair of white gloves. She was stationed less than ten feet away, directly facing me, so that the behavior of the bees could easily be observed, and individual bees be plainly seen in the bright sunlight. Removing the cover I plunged both hands simultaneously into the super, which was overflowing with bees. What happened I will describe briefly in the words of my friend:

"A great many bees immediately flew to the black band on your right arm, although by no means all of the bees which left the super. I should estimate that there were at one time as many as forty on the black cloth. They were continually coming from the super to the black band, but they did not remain long upon it. I did not see a single bee upon your left sleeve, which was wholly white. There were hundreds of bees flying about your head or on your veil."

On August 12 I continued my experiments. The morning was calm and clear, and the temperature 76 degrees F. With the exception of a black veil I was dressed all in white; but on this occasion the band of black cloth, 10 inches wide, was sewed about my left arm instead of around the right sleeve as in the previous experiments.

At 10 A.M., facing the east as before, I lifted the cover from the same hive as in the experiments of August 7. As soon as a piece of honeycomb was shaken with both

hands a large number of bees flew furiously at the black band and endeavored to sting it. Only two or three bees were seen on the white sleeve of my right arm, and they did not attempt to sting. Both from the black piece of cloth and from the open super a great number of bees flew against the black veil. I then withdrew to a distance.

A little later I again approached the hive; and as soon as the combs were shaken a cloud of bees flew fiercely at me. At one time a part of the black band was almost literally covered with furiously stinging bees, and the black veil was assailed by hundreds. The right sleeve, wholly in white, and the other portions of my dress in white, received very little attention. As I walked away the bees followed me for a long distance. A third experiment yielded similar results.

I next opened another hive on the opposite side of my apiary. When I began thumping on the frames the bees at once attacked the black band and the black veil; but the right sleeve and the other white portions of my dress received little attention.

I now left the apiary and substituted for the black veil a new white veil which I had procured for this purpose. On my return the bees, as previously, sought to sting the black band; but the white veil was less attacked than the black. The difference was most astonishing. Whereas hundreds had before sought to penetrate the black veil, the number now was so small as to cause me no inconvenience. Those which did attack seemed much less persistent.

A third hive was opened. The black band on my left arm was furiously attacked as in all the previous experiments of August 12; but the white veil enjoyed much greater immunity from the attack than the black. So great was the difference that I propose hereafter when working among my bees to wear a white veil.

As a result of these experiments I have no hesitation in saying that beekeepers should always, when at work in the apiary, dress in white. The white veil which I used was made of mosquito-netting; and while I could not see through it as easily as through the black when looking at objects at a distance, there was little difference when I looked directly downward at the hive or the ground. Very likely some other material would give better results in this respect.

The results obtained in this series of experiments are most interesting and noteworthy. It is the first instance, so far as is known to me, where it has been shown conclusively by means of experiments performed directly for that purpose that angry bees discriminate against black. Strong colonies

of black bees were employed whose inmates were of a pugnacious disposition. While I had great confidence in the entire reliability of the observations cited in my previous article, the discrimination of the bees against black was far more decisive than I expected. Incidentally I take pleasure in extending my thanks to Mr. Miller for his criticisms, which led to the planning of the above experiments. They have opened a field for further work which I am hopeful will prove of value.

I do not consider that the series of experiments described above proves either that bees "like" white or "dislike" black. Their purpose was to sting the disturber of the colony. As they flew out of the super or hive, the band of black cloth most strongly attracted their attention, and became the chief point of their attack. Discovering their inability to sting through it they did not remain long upon it, but sought to reach me through the black veil. The sleeve which was wholly white was hardly molested because it escaped attention. In comparison with the piece of black cloth it was inconspicuous. For the same reason the white veil was less fiercely assailed than the black one. The behavior of the bees does not, therefore, indicate hostility to black or preference for white.

Waldoboro, Me.

[Mr. R. F. Holtermann, who paid us a visit a few days ago, remarked in the course of his conversation that there was one of his men who persisted in wearing a black felt hat; that he finally had to tell him that he would have to wear a white or a straw hat, the same as all the other men wore. He went on to explain that this black hat was constantly inviting angry bees; that it was the practice of him and all of his men to wear light clothing, not only to prevent stings but to stop would-be cross bees from following about.

Some two or three years ago, Jay Smith, of Vincennes, Ind., told how a couple of dogs, one black and one white, went cavorting through the beeyard. The black dog was badly stung while the white one was not molested at all.—Ed.]

INTRODUCING VIRGINS REGARDLESS OF AGE

Danger of Supersedure of Queen in Smoke Method of Introduction

BY J. A. M'KINNON

Your editorial Sept. 1 regarding the smoking plan of introducing queens, while it is about the best I have yet tried, it is not always certain. Out of four queens intro-

duced in that way I found two balled three days after, and queen-cells started. After making the bees release the queens, and destroying cells, they were finally accepted, although they still persisted in superseding.

Regarding virgin queens, I can give a plan that I have used without the loss of a single one, regardless of age. Here it is. I use the regular hive full depth, with division-board forming a twin nucleus, with $\frac{3}{4}$ -inch flight-hole at opposite ends. When I have a batch of old virgins I go to a colony having sealed brood over an excluder; brush all the bees off, and extract the honey. I replace it for the bees to clean up; then I take one frame of this brood with adhering bees and replace it in one side of the twin nucleus. I add an extracting-comb partly filled with sugar syrup, and plug the entrance with grass. I leave them confined till evening. By that time the bees will have gorged themselves to the limit, and will be crowding around like a flock of sheep. I then remove the grass from the entrance and run the virgin in and plug it again for a few minutes. I might add that the entrance should be plugged again early in the morning, as some of the old bees going home with their load of syrup will have marked the spot and return for more if during a honey-dearth. About 10 o'clock I open the entrance, and the bees by that time will have settled down to normal. I have never lost a single queen introduced in this way.

If your friends who have used the smoke plan for introducing laying queens will take the trouble to look those frames over they will, in a good many cases, find the queens laying and the bees raising supersEDURE cells.

I have had several young queens that were introduced safely, and had laid four or five frames of eggs, superseded about 12 days after introducing. I believe it is always best to look through a hive and to destroy the cells nine days after killing the old queen, as I am sure that at least a fourth of the queens introduced are superseded that could probably be saved if those cells were not allowed to hatch.

St. Eugene, Ont.

Convention Notice

The 23d annual meeting of the Illinois State Beekeepers' Association will be held at the State House, Nov. 5, 6, 1913. Prizes will be given as follows: \$5, \$4, \$3, and \$2 for 1st, 2d, 3d, and 4th best essays to be read by the writers, and not to exceed 500 words. See page 83 of last (12th) annual report, or write to the secretary for particulars. The report of this meeting will go largely to make up our 13th annual report, of which every member will get a cloth-bound copy. Further individual notices will be sent to all the members.

Springfield, Ill., Sept. 15. JAS. A. STONE, Sec.

Heads of Grain from Different Fields

Good Yield of Honey in Spite of the Dry Weather

This has been the best year we have had for five or six years past in spite of the drought which has cut crops at least in half, and the fact that there was no dew nights at all. What few bees there are left, that were taken care of and looked after, have yielded a profit to beat Standard Oil stocks.

May 10 I bought a colony for \$2.00. The lower story was well filled. I moved the bees three miles home, and on the 14th I put on a case of sections for them. Up to date I have sold 66 sections of honey from that colony. These sections test from 17 to 18 ounces each, so I have sold them by the section at 18 cents. I still have fifty or more sections ready to move at any time from those bees. I have been unable to fathom the source of the supply. I know of some alsike-clover fields, some two or three miles from us, that I have thought probably were where a part of it came from. One man claims that the red clover was so rich in nectar that it was actually dripping from the petals on dewless mornings when he went into the clover-fields for the stock. Any way, we are getting the goods, and the honey is of fine quality. Others did as well as myself in securing good yields.

So far as I have learned, there have been few swarms. Some careless ones that neglected their bees came to get sections for them after the flow was past. To be sure, a part of our flow was from the once despised sweet clover, but now looked upon by the farmers in quite a different light. One man this year has sown twelve acres for fertilizing, and others will follow his example. Alfalfa is also getting started, so that we hope in the not distant future that the good honey-pastures of former days will come again, and that commercial beekeeping will be as profitable as it once was.

Philo, Ill., Aug. 26.

M. L. BREWER.

Bees Winter Better When a Way of Escape for the Moisture is Provided

I have tried the plan of wintering my bees in the cellar and also out of doors. In either case I usually found the combs wet and damp in the spring; and often water would run out of the front of the hive, and ice form on the bottom-board.

Four years ago in December I bought four colonies of bees—big strong colonies with an abundance of honey. They were in two-story home-made hives. They had gunny sack over the top under a makeshift cover. Some of them were open at the corners, and the covers were loose. Yet those bees were ready to come out at any time the hive was disturbed in the least. No water ran out of the entrance, and there was no frost inside the hive. They stood right out of doors where I put them when they were brought to my place, and they went through some 40 degrees below zero all right.

I have cut twenty or twenty-five bee-trees here in Montana. Invariably in these trees the entrance is at the top of the cavity. I have read the discussions in GLEANINGS regarding sealed covers, absorbent cushions, etc. However, last fall I made a winter house. It is 16 feet long, 30 inches wide, and high enough to put in a double-story hive if I wish. I placed my hive without bottom-board on cleats on the bottom, and bored a $\frac{3}{8}$ -inch hole in the back end of the covers, and packed the extra space with alfalfa hay, coarse remains from the cows' manger, and set a plank slanting in front of the entrances.

When I opened the hives early in March I never saw a drier or cleaner lot of combs and hives for that time of the year. The dead bees on the bottom were dry and clean, and the bees wintered well. Some were getting short of stores, which I find is frequently the case in Danzenbaker hives. However,

I had reserve combs for them. As elsewhere, the winter here was not severe.

From the above observations and experience I am of the opinion that it is better to let the moisture out, and keep the hive dry than to keep the moisture in and have the hive damp, and a lot of wet ill-smelling dead bees on the bottom-board.

Belgrade, Mont., April 16. C. A. KINSEY.

Bees Packed for Winter so as to Allow Escape of Moisture from Hives

I have kept bees for some time, and have always had marked success in wintering them. I use a telescope cover for the hives, with a three-inch space on the four sides, and a four-inch space for the top. In the air space I pack planer shavings; and just before covering the top of the hive with the shavings I raise the lid and slip a ten-penny nail between the lid and the hive body. This allows the moisture to pass out and to be absorbed by the shavings. In the spring, when I unpack the colonies I find them nice and dry without any moldy combs. As a rule the shavings are very wet, even down half way along the sides.

Last winter I put 23 colonies into winter quarters, four being quite weak. When I removed the telescope covers late in March I found the bees in excellent condition with the exception of the four weak colonies, and did not lose a colony.

Some of the hives were as full of bees as is usual the first of May.

One hive in particular was so strong that I had to lift out the frames, and a pleasing sight met my eyes—a nice lot of brood was started, and one frame in which the brood was sealed, and this March 20. This seems especially remarkable as the climate up here on the mountains is rather cold, and the seasons are slow, it being a rule that fruit bloom is ten days to two weeks earlier west and a little south.

Philipsburg, Pa., March 20. W. N. ZEITLER.

A Word of Explanation About Feeding Back to Secure Well Finished Sections

On page 564, Aug. 15, Mr. J. E. Crane asks whether there is not some mistake about getting 15 to 25 supers per colony finished by feeding back in the two or three weeks between clover and hearts-ease. This statement was based on memory, as I have not kept an exact record; and while I am quite certain one can count on 15 supers in three weeks per colony, yet it might be too much to count on 25. As I said, the character of the colony and weather conditions govern the amount finished. But with hot weather, strong colonies, and plenty of feeder surface, the section work goes very rapidly. We run up to five or six supers to the hive after a few feeds, and look the supers over about every other day, and add new ones next to the brood-chamber, or else heavy feeding will bulge the sections already on.

The bees must have plenty of room to store; and as fast as the partly finished sections are about drawn out, more partly built ones must be added. As regards the time, one usually has more than two or three weeks, especially in years when it becomes necessary to feed back. Frequently the early flow closes July 1 to 10, and perhaps no fall flow, to amount to any thing for section work, follows.

Such seasons are the ones when there are apt to be unfinished sections. We can begin a little before the flow ceases, and continue into the fall flow if it is light, so we really have perhaps nearer a month for this work than two or three weeks. I may have had the idea of counting on 15 to 25 supers per colony, and failed to state it clearly.

There is so much variation in the conduct of bees

from year to year that it is difficult to write of them so as to be understood. Sometimes they fill the brood-combs very heavily when fed to finish sections, and at other times not a great deal is stored there. My thought was to give a general idea of how to get partly built sections finished, and about how fast we could count on doing it, and let every one work out the details, varying them according to the need of the different seasons and localities. At this date, Aug. 20, I am feeding back to two colonies, and the work is going well; but as the early flow lasted until August, and tapered off very gradually, I had only 15 or 20 supers to feed back.

Dunlap, Iowa.

E. S. MILES.

The Water-bottle for Queen-cages; a Good Testimonial from One of the Old Veterans

I am glad to see that you are going to add a water-bottle to your queen-cages. Years ago I bought of A. I. Root an imported queen, and home-bred queens all came through in good shape with their little water-bottles. Contrast this with the present method. Queens I bought of Messrs. Moore, Robey, and Hand all came dead. I suggested softer candy to two of the gentlemen, and the next queens came through alive. More than half the queens shipped here are dead on arrival. I know a man who returned queens four times to the same shipper. The fifth came dead, and he let it go at that—said he was ashamed to return her. All of these queens could have been saved if shipped as Mr. Root shipped them 35 years ago.

I question whether we have improved the frame designed by A. I. Root. I had some two thousand combs built in these trussed frames. There was no sagging of the top or bottom bar unless the wire broke. This is more than I can say of the frames I have now.

Bakersfield, Cal.

C. G. KNOWLES.

[My good friend, I am greatly pleased to see your indorsement of my queen-cages and frames of olden times. If I am correct, the preference seems to be strong for a heavier top-bar; and with these heavy top-bars the wire trussing I devised seems to be unnecessary. The heavy top-bar (an inch thick or more) does away with burr combs over the frames to a great extent. See A B C book, p. 130, for a full discussion of the matter.—A. I. R.]

The Smoke Method of Introduction Again Successful

When I received queen No. 2 I removed the old queen from a small colony of what I would consider pure blacks and laid the new queen on top of the frames. In 24 hours I looked in and found the queen still in the cage, but the bees had balled her and were stinging and biting her. I made the discovery that they had started many queen-cells. I said, "You are not going to kill that queen," and I plugged up the hole in the candy so that they could not reach her, destroyed the cells, and placed the queen back on the frames. The next day I found the same conditions and again destroyed the cells. The next day it was the same, and I concluded to try Arthur C. Miller's plan of introducing as given in GLEANINGS, June 1, p. 370. I did not tear the cells down, but administered the smoke as directed, and released the queen. I left them alone two days and looked in, and there was the queen as contented as if she had been raised there. The bees that came with her were also there. This is the first time that I ever had a swarm build queen-cells when there was a laying queen caged in the hive immediately after the removal of the old queen. I am also sure that I would have failed with any method that I have previously tried in introducing.

I never have read a report of the effect of a high

dry altitude on the candy in a queen-cage. It sometimes becomes so hard that I doubt if the bees would get it out in a week. I had this experience in Fallon, Nevada, last year.

C. E. HAMMOND.

Vivian, La., Aug. 8.

Sac Brood

I am writing you in regard to sac brood. Some thing got wrong with my bees, and I sent two samples of brood at different times from two hives that were affected to Dr. Phillips, at Washington, and both times he reported sac brood, and said that it was not serious, and no treatment was recommended. The two colonies affected were weak, so I burned them before I got his answer, thinking I had foul brood. I have a colony now that was affected with only a few larvæ in one comb, so that I cut them out and am writing you to see what I must do to them.

ROSCOE McELROY.

Morganfield, Ky., Aug. 18.

[Sac brood is not dangerous nor contagious, or at least only slightly so. We are sorry that you burned up your colonies. It is found in the height of the season in most apiaries in the United States. It usually disappears in a short time, and the only damage it does is to kill half a dozen or so larvæ out of possibly twenty-five or thirty thousand other individual larvæ in the hive. Such loss is hardly worth taking into account. If you will apply to Dr. E. F. Phillips he will send you a government bulletin on sac brood. Address him, Department of Agriculture, Washington, D. C.—ED.]

Meeting of the Carolina Beekeepers' Association

The Carolina Beekeepers' Association held its mid-summer meeting in the convention room of the Langanhold, Asheville, N. C., July 26. The meeting was one of unusual interest. O. Brumfield, J. W. Gooderyn, and others discussed the merits of the ten-frame hive over that of the eight frame, with the result that each hive had an equal number of advocates.

Dr. B. F. Landis talked on the subject of the best bee for the South. A discussion followed, and the matter was settled in favor of the pure Italian.

C. W. Harmon, a packer and dealer in fine honey, gave the convention a treat as to the best methods of preparing our product for the market.

Our society has doubled its membership in less than 12 months. The next meeting will be held in Black Mountain, N. C., Aug. 29, at which time new officers will be elected.

A. L. BEACH, Sec.

Virgins Lost Because of High Wind

Your editorial, August 1, page 513, states that a high wind July 13 and 14 left your queen-rearing yard almost queenless. I have had trouble this season. I have been replacing virgins continually that went somewhere. We have had a great many high winds preceding storms, and at other times. I can now understand why so many have been lost.

Cranbrook, B. C.

T. S. GILL.

Sweet Clover and Alfalfa Stood the Drouth

This has been a dry year. We did not get any rain this summer. The bees did better than they did before for eleven years. Some for the last three years did not make their own living. Through all the dry weather the sweet clover and alfalfa did finely. This is the first year the alfalfa ever honeyed. I have got 26 hives. My best hive made 115 pounds, and some made nothing. I will get your A B C book and raise by own queens next year.

Fredonia, Kan., Aug. 26. CHAS. HEROLD.

Our Homes

A. I. Root

Seek ye first the kingdom of God, and his righteousness, and all these things shall be added unto you.—MATT. 6:33.

Lay not up treasures for yourselves upon earth, where moth and rust doth corrupt, and where thieves break through and steal.—MATT. 6:19.

In our last issue, page 663, I suggested to our good friend Doolittle that if the world could be taught the importance of seeking *first* the kingdom of God and his righteousness, all our State and national troubles would be ended; but thinking it over since then I am led to believe that I did not half realize what I was saying. Let us consider the matter a little. What is the world just now seeking? My good friend, what are *you* seeking? And, to come still nearer home, I have been asking myself what am I seeking? I have told you several times in years past, that my thought was largely devoted to hunting up "God gifts." There is a great deal said about the "high cost of living of late;" and several have suggested that we had better put it "the cost of *high* living," putting the emphasis on the word "high." Well, I have found enjoyment and happiness—yes, great happiness—by showing the readers of GLEANINGS how they could live and keep in good health without having it cost all one can earn. Our friend Terry has given us excellent lessons and suggestions along this line; and I fear a great many of us, men and women, have mistaken and exaggerated ideas in regard to what we must have to be decent and respectable. When I talked about having a little mill and grinding our own flour and wheat so as to have *better* and *cheaper* food, a great many were inclined to sneer at the idea. Let me branch off a little right here.

The good people in Cleveland have inaugurated what they call the "Fresh-air Club." They gather up a lot of poor children during the hot summer months and send them out into the country to get fresh air and outdoor exercise. This society asks the country people to take one or more of these children. For several years quite a few have come here to Medina. Now, this is all right. It is a splendid undertaking. Keeping these children free of charge for two or three weeks is, *without question*, seeking the kingdom of God and his righteousness, instead of living altogether for self; and I hardly need tell you that self and selfish interests are not "God's kingdom" by any means. It is something of a task to take two or three youngsters, brought up in the streets of a large city, and make them inmates of your home. If you have tried it you know something about

it. There is a difference in children, of course. Some will meddle with and destroy things, and have to be watched almost constantly. Others, who have been properly brought up, will be orderly and helpful. Now comes my point:

A couple of children that came from the city were taken by a family of moderate means. Pretty soon the children began to grumble, and they grumbled at having steel knives and forks on the table. They had not been used to that way of living. In another case a family of moderate means undertook to care for three children. I believe, however, that somebody who was abundantly able paid for the board and lodging of two of the three. Well, one little girl one day volunteered the information that her pa in the city received quite a little higher wages than the man who had volunteered to help care for the poor children!

I have related the above incidents to show you that even the children have exaggerated ideas of how we ought to live. Their parents, evidently, had not been seeking first God's kingdom and his righteousness.

Since we have been discussing the problem of the high cost of living, somebody has suggested that the "high cost of dying" ought to receive some attention. When my good friend Metcalf helped us to put the Anti-saloon League on its feet something over twenty years ago, he gave liberally, and also gave repeatedly, to get the new organization under way. He was always giving for praiseworthy undertakings all his life: but when he came to die he protested against money that might do good being buried up and wasted on an expensive coffin. He put a clause in his will saying that his coffin must not cost over \$25.00. I am told that, when the friends went to the undertaker's, they could not find any kind of coffin so cheap. You who have paid funeral bills know how it is in your own locality. An article in the Cleveland Plain Dealer of a recent date intimated that there is a combine among undertakers, and that they have a peculiar opportunity to combine, because no one ever disputes or questions the correctness of funeral bills.

Our friends will recall that, for a great part of my life, I was an enthusiast on greenhouses: but of late I have gradually lost my interest in them. Shall I tell you why? Because the greenhouses nowadays are mostly devoted to growing stuff for funerals. I have seen a wagonload of beautiful and expensive flowers thrown away at the funeral of a comparatively common-

place individual. I do not know whether these flowers are buried with the remains or whether they are dumped in a heap in the back yard. I believe, however, that seldom is any use made of them. I have all along protested against these customs, because I have happened to know that a great many times the bereaved family sadly needed the money that was just literally "dumped" into the fire. In olden times it was customary to bury things with the departed loved one, thinking he or she might need them. The Indians had a tomahawk and bow and arrow put in the grave, thinking the dead warrior might need them in the new hunting-grounds. And I believe the heathen in some nations still put in food for sustenance during the "trip across the dark river." While there are starving people by the hundreds and thousands in different parts of the world, great sums of money are buried in the ground where they can not possibly do anybody any good.

I have said more on this line of my subject than I intended; but is this sort of work seeking the kingdom of God and his righteousness? and is it "laying up treasures in heaven"? The Savior urged us, you remember, to put our treasure where it will not rust, and where it can not be stolen by thieves. Are we doing this? Here is a clipping from the Cleveland *Plain Dealer* of Sept. 11. Read it, and see what you think of it:

PAYS \$30,000 FOR BEAUTY; ASTOR'S WIDOW INSTALLS LUXURIOUS ROOM ADJOINING BED-CHAMBER.

NEW YORK, Sept. 10.—Mrs. Madeline Force Astor, widow of John Jacob Astor, will remain beautiful if a \$30,000 beauty parlor can effect that end. She has installed an electric beauty room on the second floor of her Fifth Ave. home, adjoining her bedroom.

The room, 9 by 15, is the quintessence of luxury. The white tiled floor is concealed by an oriental rug, while paintings, plate mirrors outlined in gold, and concealed lights are in the room. Gold and pearl are used wherever possible.

A modified barber-chair is in the center for use during the hair-dressing, massage, and other operations of the beauty doctor.

The world knows little or nothing about Mrs. Astor; but the world does know very much about John Jacob Astor. Has this woman ever done any thing for the world that should entitle her to this enormous wealth to spend for self as she chooses? No wonder the hard-working people are forming "unions" and sending up protests against this unequal division of wealth. Now, I am not going to turn socialist just yet. I hope John Jacob Astor secured his great wealth as the result of honest and legitimate trade and traffic. But how about his wife and children? How about thousands, including Thaw, his mother, Diggs, and Caminetti, who are trampling our laws under foot,

and saying virtually to outraged humanity, "Help yourself if you can." As I dictate these words, however, I can thank the Lord that there seems to be a prospect of better things, and, not only that, but Diggs and Caminetti are to go to prison. Of late, however, it transpires that after they are put in prison at great pains and expense, they do not seem to stay there. The man who led the gang that lynched and cruelly murdered poor Etherington at Newark, Ohio, is now at liberty again. Notwithstanding the saloon-keepers and liquor-men fought hard and long he was finally sentenced to twenty years in the penitentiary; but when he had been there just two years the whisky gang got up a monstrous petition and had him "pardoned out."

Dear friends, it just now occurs to me that I am making a doleful story so far, and may be I had better drop that part of it. It is a comparatively easy matter to point out the faults of others, of our administration, of the way society manages things, etc. But it is a harder matter to reconcile the fact that we are *all* sinful. We are all of us—yes, the best of us—spending a great deal of time and money in seeking other things than God's kingdom and his righteousness. We are more or less selfish; and this same selfishness blocks the way of getting what we are seeking. Thousands are learning a lesson—yes, I think more than ever before. People who have great wealth are, some of them, using that wealth to lay up treasures in heaven.

Instead of seeking first the kingdom of God and his righteousness, there is a new fashion of late, and it would look as though a good many people had adopted, as a motto in business, something like this: "Seek ye first the dollars and cents belonging to your neighbor; and (if he does not make any fuss about it) you will be heaping up treasures for yourselves."

I hardly need remind you of the public officials who, while receiving a liberal salary for looking after the interests of the people at large, accept a bribe for doing just the opposite; and I hardly need remind you of the way in which barbers, dentists, some doctors, perhaps some lawyers, "hold up" their victims if there is nothing in particular to hinder them from doing so. If you go down to Florida, be careful to ask prices in a barber-shop, at the dentist's, at the drugstore. If they have reason to suspect you are a new comer, and are unacquainted with prices and customs, you will be pretty sure to be "bled" unless you make a bargain beforehand. Now, please do not understand me as saying that this is the rule.

There are good Christian people, a lot of them, in Florida and everywhere else, who are *really* seeking "God's kingdom," and trying to lay up treasures in heaven. But this fashion of holding up people is in danger of spreading everywhere, among young and old. Let me give you one illustration.

In our capital city of Columbus, Ohio, I stopped to have my shoes shined up a little, after some dusty travel. The boy did a very neat job; and noticing some shoe-laces on a hook by his stand I told him he might replace my old soiled ones with the new. After he had my shoes neatly tied up I asked him how much the bill was. He replied, "Twenty-five cents."

"Why, my young friend, your sign here says, 'Shine, 5 cents.' Do you mean you want 20 cents for a pair of shoe-laces?"

"Yes, that is the price for those extraneous shoe-laces."

You see the boy was up with the times. He not only had my shoes nicely shined and tied up, but he had me "tied up" also. I could not ask him to undo the laces and hang them up again on the hook, for they would be second-handed. Should I quarrel with the boy, even if he did charge 20 cents for a pair of laces, knowing that two pair just as good are usually sold for a nickel? I imagined his eyes twinkled as he saw that he had me "in a corner." I gave him the quarter, mentally deciding that next time I would stick to my rule of inquiring the price before I invested, even if it were only a pair of laces.

Now, dear friends, it is not only for *your* good, but for the good of every one who has something to sell, that you make it a rule to ask the price beforehand. It will help you and help the other man, or boy, to get nearer to both of the two precious texts we are considering.

Let me suggest to our friends who are writing me letters lately in regard to socialism, that the man who uses his money to start a factory, and gives employment with fair wages to hundreds of men, women, and children, is, in my opinion, laying up treasures in heaven. If the article that he manufactures is better and cheaper, and something that is needed in every-day life, his money is really invested in a way that may be called "treasure in heaven." Suppose this factory is started in a rural community and is for the purpose of manufacturing hoes. If the proprietor secures better steel than has been used before, makes a lighter implement, hunts up better wood for a handle, and if he sells it at a smaller profit than other makers, he does good in two or three ways. First, he gives a poor man a nice hoe for a little money. Then by the inven-

tion of this beautiful bright and shining hoe like the one I have used nearly every day of my life, he induces old men and those loafing around in towns to get out into the garden and help "reduce the high cost of living." Now, this manufacturer could not have done any thing of the sort without having considerable capital. If he is a Christian man (and he certainly ought to be, and thank God there are lots of men of means who are Christians) he can easily be a personal friend, I might say, to every one in his employ, and to every one who buys one of his hoes. I might say the same thing about hammers. When Maydole first made a better hammer than the world had ever before seen, he sent out men to sell them. These men would drive a nail through a board, and then by means of the beautiful well-tempered claw, they would grab hold of the small end of the projecting nail and pull it through the board, head and all. My friends, you have probably tried to get along with a poor hammer, and I hope you have also found out what can be done with one of the very best Maydole hammers.

In the last few years it has got to be quite the fashion to put great values on special things.* Last summer the newspapers gave several accounts of women who have been robbed at fashionable watering-places. They carried along to these summer resorts diamond necklaces worth thousands of dollars. I am old-fashioned, I must confess; but I have reason to believe "there are others," and I have said several times to Mrs. Root, "What in the world does a woman want with a diamond necklace that cost enough to buy half a dozen good big farms? What good does it do them to invest money in that way?" And if the poor deluded creature in seeking for happiness must have the senseless bauble, why on earth should she carry it to a watering-place or have it in a Pullman car where the porter, who is perfectly innocent, may be worried to death because he is accused of stealing it? If Billy Sunday (may God be praised for what he has already done) or some other evangelist like him has been the means of getting such women—yes, and men too—to give up their diamonds, and "invest" the money in "treasures laid up in heaven," we can all rejoice that God's

* Just recently I noticed they are putting great value on special furs. I am told by the papers there are fox skins worth—no, I mean fox skins that are *called* worth—\$10,000; and if I am not mistaken I read of a pair of silver foxes that were sold for breeding purposes for \$60,000. These foxes that are worth such a pile of money are bred on Prince Edward Island, Canada. Can we not take it for granted that it is the women-folks who are mostly to blame for putting these tremendous values on a little piece of fur?

kingdom has come here on earth. Now, dear friends, let us get down home. Are you and am I, as we approach old age, seeking first the kingdom of God and his righteousness? Are you and I both making it our careful study every day to be laying up a little more treasure "where moth and rust doth not corrupt, and where thieves do not break through nor steal?"

WHEN LIFE LOOKS BLACK AND BLANK, WHAT SHALL WE DO?

Mr. Root:—I wrote you a few weeks ago inclosing an advertisement clipped from *Suburban Life*, telling of a new method of growing celery, etc. You also wrote me a personal letter upon receipt of mine, and it is for that letter I wish to write you now, thanking you for the way it was worded, for you finished the letter like this: "From your old friend A. I. Root."

When life looks as black to others as it does to me, a friendly word like that is as a glass of cool water to a thirsty man in the desert. I am glad I have an old friend. I wish I had some young friends too. and then they would not die so quick.

SELLING SECRETS; RIPENING TOMATOES UNDER GLASS, ETC.
I was tempted to send a dollar to another party who has a secret for the benefit of market-gardeners, and he wants a dollar for it. A party advertises in *GLEANINGS* that he has a method of ripening green tomatoes in November. He says, address with stamps. I sent him a stamp and asked for particulars. He wrote me he would mail the particulars for a dollar; but as it looks so much like the celery deal I will not send my hard-earned dollar.

W. G. BRAINARD.

Gouverneur, N. Y., Sept. 14.

Below is what I replied to the above:

Friend Brainard, is it not at least partly your fault that you don't have friends? Are you reading my talks through *GLEANINGS*? and are you reading your Bible and keeping in touch with Christian people? Are you going to church and Sunday-school? Are you trying to make the world better? Of course, I don't know your circumstances; but if you are interested in exploring God's gifts and high-pressure gardening, you ought to be thankful and happy.

Don't send any money for secrets. No good thing ever came in that way. I have taken the man to task in regard to green tomatoes, but he don't seem to want to let me have his secret, even if I offered to send him the dollar.

May the Holy Spirit help you to see what a precious gift is human life, and help us to see also that even the obstacles that lie across our pathway are often evidence of God's love if we take them in the right spirit. "Whom he loveth, he chasteneth."

I think I shall have to say a word more about the advertisement of a plan to have ripe tomatoes in November, etc. It was given in two issues of *GLEANINGS*—Aug. 15 and Sept. 1, as follows:

Have nice ripe tomatoes in November from your late green crop. Ripen without sunshine. Let me instruct you how. Address, with stamps, 520 Atwood St., Longmont, Colo.

The above reads as if the secret or the discovery would be sent on receipt of a couple of stamps or whatever the applicant saw fit to pay him for his trouble. It transpires, however, the advertiser (who

does not give his name, you will notice) wants the stamp to pay for sending his circular. This advertising circular tells you you can not have the secret without sending a dollar. Had we not supposed (as every one would suppose) that the instructions were given for the stamps, it would not have appeared in *GLEANINGS*; and this is to say that if any of our readers have been misled, and have sent a dollar in response to the advertisement, they can have their money back by letting us know. Our experiment stations have said repeatedly that no good thing in gardening or agriculture ever came by buying secrets. Perhaps I might add what is generally well known, that the great tomato industry in Florida is built up by gathering the tomatoes just before they begin to color. These are then wrapped up almost air-tight and shipped north. A plan was also given in *GLEANINGS* some years ago of pulling up the vines just before frost comes and spreading them out on straw in cold-frames under glass. The cold-frames are usually unoccupied at that season of the year, and the tomatoes ripen beautifully, and are sold at big prices in the North about Thanksgiving time.

A LEVEL-HEADED FARMER.

One of our people sent me the following clipping from some periodical:

I do not know when I have been so impressed by an item in a newspaper as I was by one I came across last night, while reading the exchanges that reach my desk. It appeared in a small county-seat paper published in a prominent grain-belt State, and was to this effect: "One farmer near —— lost forty pigs during two days and one night. When sympathy was offered him over the financial disaster, the farmer said he felt thankful that such plagues stayed around the barn and did not enter the house."

While we honor and respect the good farmer for remembering, even during such a loss, that the loved ones in the home are of incomparably more value than the pigs, I want to say a word on another line. We do not know what State he lives in, but I believe that most of our States have experiment stations; and what are experiment stations for if not to help out farmers in just such calamities? Boiled ham (suitable for sandwiches) is now 40 cts. per lb. here in Medina, and 40 or more in Florida. Heading off the hog cholera by scientific means is protecting the poor hardworking people; and, if you will not accuse me of going to extremes, I should like to suggest it is also laying up treasures in heaven. If I am correctly informed (although I am not in the "pig business" but only a chicken man) our Department of Agriculture is getting the upper hand of just such troubles as are spoken of above.

High-pressure Gardening

"A CORN CATECHISM;" OR, IS IT POSSIBLE TO RAISE 100 BUSHELS OR MORE OF CORN PER ACRE UNDER OHIO CONDITIONS?

The above is the title of a very valuable bulletin of 16 pages, sent out by our Ohio State University. It gives directions, boiled down, for securing a good corn crop, that are exceedingly valuable. My impression is that the average farmer in the average locality can make 100 bushels per acre, without much question, if he follows directions.

The matter of barren cornstalks, which I considered in our last issue, is gone into quite thoroughly. To get this large yield one must have a perfect stand, or very near that. No hills should have less than three stalks, and none more than five. To do this you will have to do some thinning out. But I think this will pay in the end. Selecting your seed ears from the field in the fall is an important matter. Taking the corn out of the cornerib, as I have said, is a very poor way of improving your strain of corn. Two years ago I went through our cornfield and clipped off the stalks just above the ear for ears I wanted to save for seed. When husking time came we took four or five men out of the lumber-yard to do the husking. The man who was chosen as foreman, by my directions told the huskers to be very careful and save out the ears from the stalks that were clipped. What do you think happened? Most of the huskers were used to farmwork and husking corn; and in spite of orders all but the foreman paid no attention to the clipped stalks, thinking, probably, they knew more about picking seed corn than I did, and gave as an excuse that the proper way to get seed corn is to pick it out of the crib. Let me say again, your selected ears for planting should be taken from a hill of three or four stalks. Then you have your perfect ears in spite of environment. If a nice large ear is selected from the crib, the chances are great that it was taken from a hill containing only *one stalk* of corn. The ear was large and fine in this case because it had a better chance than the rest of the field, and not because of extra vitality and pedigree.

THE DASHEEN IN THE WEST INDIES; THE ORIGIN OF THE NAME, ETC.

Mr. Root:—I see by GLEANINGS that you and your readers are interesting yourselves in dasheen as a possible crop in the States. I grow this plant extensively as a "catch crop" between young cocoa trees, and wish to point out that the man who wants a crop (*i.e.*, tubers), puts in plants; and the man who wants plants put in tubers. Especially with

your short summer in Ohio it would be rather hopeless to expect a crop from tubers; but I quite understand that in Florida it might be different. As these plants thrive here with a rainfall of 100 inches a year they will naturally want more water than your annual rainfall gives them, and flat culture. I am sending you a dozen plants by parcel post, and want you to let me know in what condition they arrive. One plant is trimmed ready to plant; from the rest, remove all roots and dark root stock (put them in ground apart to make plants), and also skin away any discolored root sheath from plants, leaving a narrow line only of root stock for new roots to spring from.

Do you know how the word "dasheen" is derived? It was originally called in French *patois* "chou du chine" (shoo d'sheen), *i.e.*, the Chinaman's cabbage; but the *chou* has been dropped, and the English accent has altered the two last words to "dasheen."

GEO. S. HUDSON.

Eppard Estate, St. Lucia, W. I., Aug. 19.

I must confess that I do not exactly understand about "tubers" and "plants," as mentioned above. The only thing we have any knowledge of so far is the tubers furnished by the Department of Agriculture, about the shape of an egg, only smaller, and these are what we planted. Perhaps the dasheen mentioned above is different from the Trinidad dasheen such as we have.

The sample "plants" so kindly furnished came to hand Sept. 17, just a little less than a month from the time they were mailed. So far as I can judge they stood the long trip finely, and came to hand with the white shoots already started, and an abundance of new white roots. In fact, they looked as if they had been growing on the way. I planted them out in good rich soil, and with the gentle shower that came right afterward I think every one of the dozen will grow. If frost comes I expect to protect them until we go back (Nov. 4) to our Florida home, when they will be moved again to our southern clime.

The name, "Chinese cabbage," may, perhaps, give us another clue to this considerable family of dasheens.

DASHEEN AT THE BATTLE CREEK SANITARIUM.

The following clipping appeared originally in *The Vegetable Grower* for Feb., 1913, and later appeared in *The Battle Creek Idea* for March 16. With it is a beautiful picture of dasheen sprouts in a greenhouse. It describes the efforts Dr. Kellogg is making for his patients.

Of course, it is necessary in a sanitarium that the food be as palatable as possible. Besides, it is the constant effort of Dr. J. H. Kellogg, the superintendent of the sanitarium, to provide as large a variety in the diet as possible. He has recently added to the menu a new vegetable, dasheen, which the United States Department of Agriculture is anxious to introduce into general use. The plant somewhat resembles the potato, and some people find it very palatable. The green shoots can be used like asparagus,

while the tubers can be served as potatoes are or be ground into flour. The sanitarium has taken the entire product of dasheen of the Government Experiment Farm at Brooksville, Florida, last year. This amounts to more than a carload. It is planned to raise a considerable amount of this vegetable in the greenhouses for winter consumption. An experiment will also be made in growing it out of doors, the plants being started in the greenhouse.

Following this the *Idea* comments editorially:

The sanitarium, by the way, is harvesting its first crop of dasheen. The accompanying photograph shows the plants, beautifully blanched, and ready for the cutting. The stalks are cooked in much the same manner as asparagus, and are voted a remarkable success by the sanitarium guests. They have a delicate, individual flavor, unlike any other vegetable, though the root when baked is not at all unlike the Italian chestnut in flavor.

THE AMADUMBE, THE DASHEEN OF SOUTH AFRICA.

On page 471, July 1, a missionary of South Africa offered to send me some samples. See the following.

Mr. Root:—Your letter of June 3 arrived at Mount Silinda about two weeks ago, during my absence while attending the Rhodesia Missionary Conference at Bulawayo. I reached home yesterday.

I have put up a sample package containing three each of the malata sweet potatoes (as we call them), and the amadumbe, addressed to you. I will have it registered, and hope it will reach you safely. I am not quite sure as to the limit of weight of sample packages, so, instead of sending a larger package to Florida, I may send two packages in about two months or a little less, which should bring them to you in Florida in November. W. L. THOMPSON.

Mount Silinda, Melsetter, S. Rhodesia, Aug. 2.

The samples mentioned above are at hand. The amadumbe is so much like our Trinidad dasheen that it seems to me there can not be very much difference in form, shape, and solidity. The buds just started are exactly like the dasheen. We sent them all to our Florida home to be planted, with the exception of one bulb. I am going to plant this here in Medina to see how the foliage compares with the Trinidad dasheen. Many thanks, friend Thompson. When they get our parcel post in such shape that we can swap "garden sass" with the friends all over the world, including the remote islands of the sea, we shall no doubt be able to reduce the "high cost of living;" and spreading the gospel will help it along better than any thing else in the whole wide world. "Seek ye first the kingdom of God, and his righteousness," etc.

THE DASHEEN—SOMETHING DIRECT FROM THE ISLAND OF TRINIDAD.

Regarding dasheens, I may state that I confirm all that is written in GLEANINGS of Aug. 1, p. 553. The people here use it the same way. If they are higher than a man's head, as on p. 18, you are doing pretty well. We scarcely see them so high here. The tubers here attain 10 to 15 lbs. I do not agree with p. 18 of July 1 that it tastes better than the sweet potato—at least not to me. At the prices you are getting the bulbs there, I think it would not pay

you to send them from here by parcel post (the only way), paying 12 cts. per lb. postage. Otherwise I should be only too glad to send them. Besides, in a short time you are going to have them in large quantities, as the bulbs multiply so much; in fact, you have to be careful in the cultivation, otherwise what you get is only bulbs and no tubers. Unless you extract the bulbs continually you get no substance—tubers.

C. M. CARMONA.
San Rafael, Trinidad, B. W. I.

DASHEEN A SUCCESS IN OHIO.

To-day, Sept. 20, we made our first test of one of the side tubers of one of our dasheen plants. To my great surprise the tuber was bigger than a large hen's-egg; but as it was growing rank and thrifty there was a great green stalk (bigger than a hoe-handle) with large leaves on top. We cut off the largest leaves, then cut off the green stalk above the tuber, and cooked the green and the smaller leaves in a sort of stew. As there was considerable liquid in it when done I suggested putting in a few crackers; and it was one of my "happy surprises" to find it was so much like mushrooms that, had my eyes been shut, I should have declared it was mushrooms. The green tuber itself took nearly an hour to bake so as to be well done; and although it was not equal to the matured tuber sent me by the Department of Agriculture, it was what I would call a very nice baked potato—that is, when you bake potatoes that are only half ripe. Mrs. Root said at once the baked tubers tasted like a new potato not fully matured. Now, the maturity will depend on how long frost holds off. Sometimes here in our locality we do not have a killing frost till November. This would give us five or six weeks yet for the dasheen to ripen. From the fact that every bit of the plant is edible (and delicious food besides) I think it safe to say it may be grown as far north as we are.

May the Lord be praised for giving us this new vegetable for human food. The tuber I dug was from one of the side shoots. The central plant produces a very much larger one. The first large leaves on many of the plants have now turned yellow and are dying down. I take it that at maturity the leaves all die, and the nutrient in these great luscious leaves goes down to mature the tubers. The central stalks for quite a little distance above the ground are now as large around as the top of a teacup; and if they should be used now like asparagus there would be a large amount of nutritious food in them.

By the way, letters are coming in every day asking for tubers to plant. I can not furnish them. I expect to give the readers of GLEANINGS a tuber or two apiece. That is all I can do. Crenshaw Brothers, of

Tampa, Florida, are preparing to send seed tubers by parcel post. If you want a peck or a bushel or more I think you had better write to the Brooksville Development Co., Brooksville, Fla. That is where I got my five bushels.

Just one more word, dear friends. In writing up these articles on high-pressure gardening and developing God's gifts it would be out of place for me to have any thing to sell. There would be a temptation to exaggerate, and I should not feel free to commend or criticise as I do now; therefore please do not ask me to sell duck eggs, Buttercup eggs, dasheen tubers, or any thing I have mentioned here.

THE GUADA BEAN, OR SOLOMON'S ISLANDS GOURD.

We are pleased to notice in the Florida *Times-Union* a picture of the guada bean that I have several times spoken of. Below is what is said of them:

Mr. Davis has proved that these strange vegetables will grow in Florida, and of them he says, facetiously, in his paper, *The Winter Garden Times*, "Beans is beans. We now have on two vines of the guada bean or Solomon's Islands gourd, seventeen pods which measure from a foot to 44½ inches in length, which certainly strengthens our claim that 'Beans is beans.'

"We overcame our scruples Sunday, and cut three small ones that had curled up, and which we thought would not make good seed, and cooked them.

They were excellent, and remind one of the string bean or asparagus. We cooked in salted water; and with some creamy butter at 45 cents a pound, and pepper, they were good eating. It took about fifteen minutes to cook them tender.

"We have demonstrated that these beans could be grown in Florida during the hot summer months, and now we wish to try them for September, October, and November. We have two vines just coming through the ground; and if they mature in two months they might be ready for shipment in November. We expect to ship on a flat car and cord them up like cord wood. Nothing smaller than five-foot beans will be shipped."

I think it is now pretty well demonstrated that this bean can be grown in Ohio as well as in Florida; for notwithstanding the exceedingly cold and backward spring, and the further fact that we did not get the bean in time to plant early, we have now several pods big enough to cook. Very likely they will not grow long enough to be "corded up" as mentioned above; but if they are as good as asparagus they are certainly a great acquisition.

Later.—To-day, Sept. 17, our good friend Henry Borchert, of Laredo, Tex., has sent us a guada bean, by express, 30 inches long. We had a part of it for breakfast, and I should say it tasted like something half way between a summer squash and asparagus; and it is, without question, a very pleasant and nutritious food. I imagine it wants a good rich soil; but it promises to be quite an addition to our list of garden vegetables.

Temperance

Perhaps I should explain, before giving the following, that Akron, Ohio, is a big city with between 200 and 300 saloons. With this in mind, read the following from the *Ohio Messenger*:

DOUBLE STANDARD AT AKRON, OHIO.

Up at Akron, Ohio, the addle-pated men have licensed a lot of saloons to spread disease and degradation among the people.

The taxpayers make it a condition of conducting the infamous business that the saloonkeepers deliver over a part of the profits of the traffic.

In the nets thus spread, a lot of young people have been caught, and sent reeling toward the Pit.

Many of these are young girls, lured into these traps designed by fool men for that purpose, and there their lives have been wrecked.

It appears that since January 1 twenty-four men have pleaded guilty to or have been convicted of contributing to the delinquency of young girls. The saloon was the chief instrument through which these vipers operated.

Out of the twenty-four, only seven are undergoing punishment. The others are under suspended sentences in whole or in part, or are running around on bond.

Swift punishment was the invariable fate of the girls.

The women of Akron are up in arms at this, and demand the punishment of the men along with the women.

But justice in Akron wears pants; and, being a

part of the electorate, it shares in the miserable guilt. It is part of the body politic that votes to license the business, and then goes around snivelling about the natural, unerring results.

If the women could make any worse mess of things than the men have done, if given the ballot, then popular government is, indeed, in a sorry plight.

"SOMETHING'S THE MATTER WITH KANSAS."

We make the following extract from an article in the *American Advance* for Sept. 6, copied from the *Philadelphia North American*.

A few days ago, when the whole country was worrying about the unprecedented heat and drouth in the West, the governor of Kansas issued a public statement saying he hoped no one would waste pity on the people of his State.

"With more than \$200,000,000 on deposit in our State and National banks, we could weather a worse storm than this without hardship," he said.

And when you stop to think that this money, divided equally among the men, women, children, and babies of Kansas, would give each of them \$118 in cash, not to mention the tidy sum of \$1684 each is credited with as his or her share of the State's assesed wealth, you can see the force of the argument.

As a matter of fact, Kansas, which last year produced \$325,000,000 worth of farm products, can better afford such a roasting and drying up than any other State in the Union, for her per capita wealth is larger than that of any other State.

She can better afford this or any brand of calamity, for her people are not constantly paying out huge sums for the care and keep of criminals, paupers, insane, and feeble-minded.

In eighty-seven of her 105 counties there are no insane. In fifty-four of this number are no feeble-minded. Ninety-six counties have no inebriates, and in the other nine they're as scarce as hens' teeth. Thirty-eight county poorhouses are as empty as a last year's locust shell, and most of these have been so for the best part of a decade.

At one time not long ago the jails in fifty-three counties were empty, and sixty-five counties were on the roll as having no prisoners serving sentence in the penitentiary. Some counties have not called a jury to try a criminal case in ten years, and the attorney-general says, "A grand jury is so uncommon that half our people wouldn't know what it is and how to use it."

Something is the matter with her. That something, we believe, can be boiled down into these first fourteen words constituting an amendment made to her constitution in 1881:

"The manufacture and sale of intoxicating liquor shall be for ever prohibited in this State."

Something similar has appeared in GLEANINGS already, but without the further details. When you hear people talking about our government losing "revenue" by banishing the saloon, point them to the above facts in regard to Kansas.

SOME GOOD NEWS FROM AN OLD FRIEND AWAY OFF IN CALIFORNIA.

Mr. Root—We just had a conversation at our breakfast table; and wondering if it would not please you we mail you a clipping from our daily paper, the San Bernardino Sun, in regard to the great victory of prohibition, as you will see it was sweeping in character. The ladies began marching to the polls early, and kept it up until late; hence the large majority. The Salvation Army workers are doing a wonderful lot of good in their open way of worship and sign-posting. At public watering-troughs along the highways, and on smooth-faced stones some scripture texts are inscribed, and under advertisements of social gatherings, races, etc.

Rialto, Cal., Sept. 10. E. J. ATCHLEY.

Below is the clipping referred to:

RIALTO DRY IN REALITY; BOOZE-WAGONS CAN NO MORE DELIVER GOODS TO THE CITRUS CENTER.

By a decisive vote last Saturday Rialto not only put a ban on saloons; but the delivery wagons which heretofore have been delivering wet goods from adjoining towns and cities will be a thing of the past.

It was a great victory for the "drys," the vote being 185 for the banishment of the wet goods to 42 which favored.

The real intent of the election was for the purpose of putting a stop to the delivery of intoxicants from cities where liquor licenses are in vogue.

The result of the election also prohibits liquor from being given away in Rialto. Sentiment against the legalizing or assisting in the use of liquor in any way was overwhelming in the pretty little city of Rialto, and intense interest was taken in the election, by both sides.

Please notice the overwhelming victory in the above was brought about by the women, the Salvation Army, and everybody else; and the suggestion in regard to putting up temperance mottoes and scripture texts, etc., is well worthy of being followed. We might

indeed call it "high-pressure" temperance work. Who comes next?

THE ANTI-CIGARETTE LAW OF WEST VIRGINIA.

Dear Mr. Root.—I am sending a copy of the cigarette law of our State, which I know will interest you. I saw where you had been informed of our State going dry. I hope you will live to see this same law go into effect in every State, and I believe you will. MRS. CONRAD G. ANDERSON.

Yellow Springs, W. Va., Aug. 2.

Amen to the wish that a similar or more sweeping law may be enacted for every State. Below is the clipping referred to:

Prosecuting Attorney Robert White has requested the *Review* to publish the cigarette law, which goes into effect May 24, which will be done later.

In this statute it is unlawful to sell, offer, or expose for sale, or give away or furnish or cause to be given away or furnished to any person under the age of twenty-one any cigarette or cigarette papers; and it is unlawful to sell or give to any person under the age of sixteen years any cigar, pipe, or tobacco in any form. It is also unlawful for any person under the age of twenty-one years to smoke or have in his possession any cigarette or cigarette papers. For each offense there is a fine of \$5.00.

The Prosecuting Attorney desires attention called especially to the fact that every constable, policeman, town sergeant, sheriff, or his deputy, when he finds any person violating the provisions of this act shall make inquiries and arrest such person at once. And if any such officer fails to perform this duty required of him he shall be fined \$5.00. A fine of \$5.00 is the penalty for smoking or using cigarettes in any school building or on lands used for school purposes.

IMPROVED PARCEL POST; SOME SUGGESTIONS BY OUR GOOD FRIEND A. T. COOK.

Much praise is due Postmaster-General Burleson for his improving our parcel post. More may be mentioned.

All third-class matter should be included, and the rate for all matter under one pound for any distance be 1 cent per 2 ounces or pound rate. This would entirely eliminate the third class, and wonderfully simplify the business. Surely third-class matter—seeds, plants, books, etc., deserve as low a rate as any. (Before the parcel post they were but half the merchandise rate.) As parcel post now stands, 1 cent per ounce up to 4 ounces is too high, and no better than old rates; and over 4 ounces, much higher than before, in many cases even more than letter postage. This should be changed quickly.

I think too the "zones" could be simplified, and three zones be a plenty; viz.: First zone, the county and all adjacent counties; second zone, the States and all adjacent States; third zone, everything beyond. Of course local rural routes should have their special rates.

A. T. COOK.
Hyde Park, N. Y., Aug. 6.

WHAT ONE OF OUR ADVERTISERS THINKS OF THE VALUE OF OUR ADVERTISING COLUMNS.

The A. L. Root Co..—Inclosed find check for balance due on my advertisement. You may discontinue the same. I will be ready for another in the spring. I am glad to say that I did a nice business this season, and I believe my customers are all satisfied, as I tried to treat them right. I have lost but three or four queens on the road. I certainly feel that the advertisement did me lots of good, as nearly all said they saw it in GLEANINGS. I have not had one complaint all summer.

S. CLICK.

Mt. Jackson, Va., Sept. 5.